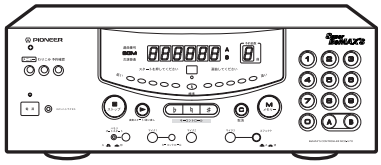
Service Manual



ORDER NO.
ARP2994

DIGITAL AUTOMATIC DATA PROCESSING MACHINE

MCO-V700

MODEM BOARD

MMD-V700

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Type	Model		Power Requirement	Remarks
	MCO-V700	MMD-V700		
L/TA	◯	–	AC110V	
MLW/HK	◯	–	AC220-230V	
ZL/TA/HK	–	◯	————	

NOTE for MLW/HK type (Serial number: 1 to 100 only) :
BOOT ROM Assy (BWZ1839) of HLK/HK type is used only with 1 to 100 of the serial numbers. When the BOOT ROM Assy (BWZ1839) is replaced or when there is no stock of the service part of BWZ1839 with the appropriate product, BWZ1839 becomes unnecessary by replacing the MAIN Assy (BWP1035).
BOOT ROM Assy (BWZ1839) becomes useless when MAIN Assy (BWP1035) breaks down and it is replaced.

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PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153-8654, Japan
PIONEER ELECTRONICS SERVICE, INC. P.O. Box 1760, Long Beach, CA 90801-1760, U.S.A.
PIONEER ELECTRONIC (EUROPE) N.V. Haven 1087, Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE. LTD. 253 Alexandra Road, #04-01, Singapore 159936

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1. SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 – Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

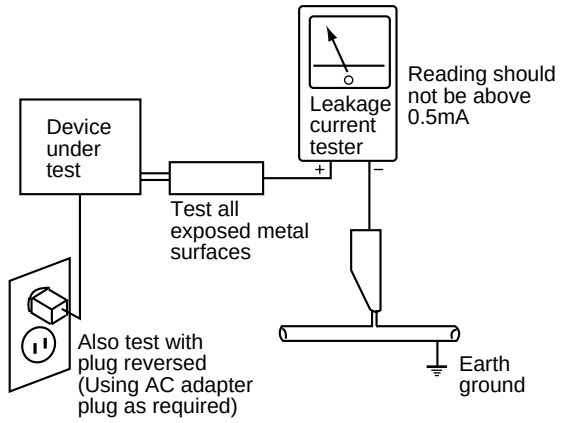
(FOR USA MODEL ONLY)

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Reading should not be above 0.5mA
Leakage current tester
+
–
Device under test
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

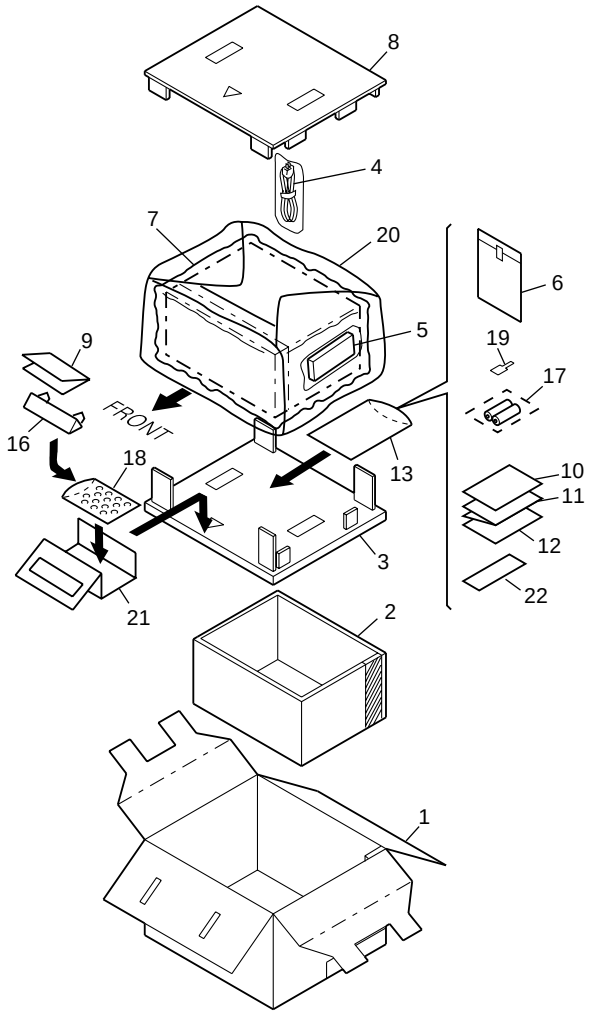
The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. EXPLODED VIEWS AND PARTS LIST

NOTES: ● *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
● *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
● *Screws adjacent to ▼ mark on the product are used for disassembly.*

2.1 PACKING (MCO-V700)



(1) PACKING (MCO-V700) PARTS LIST

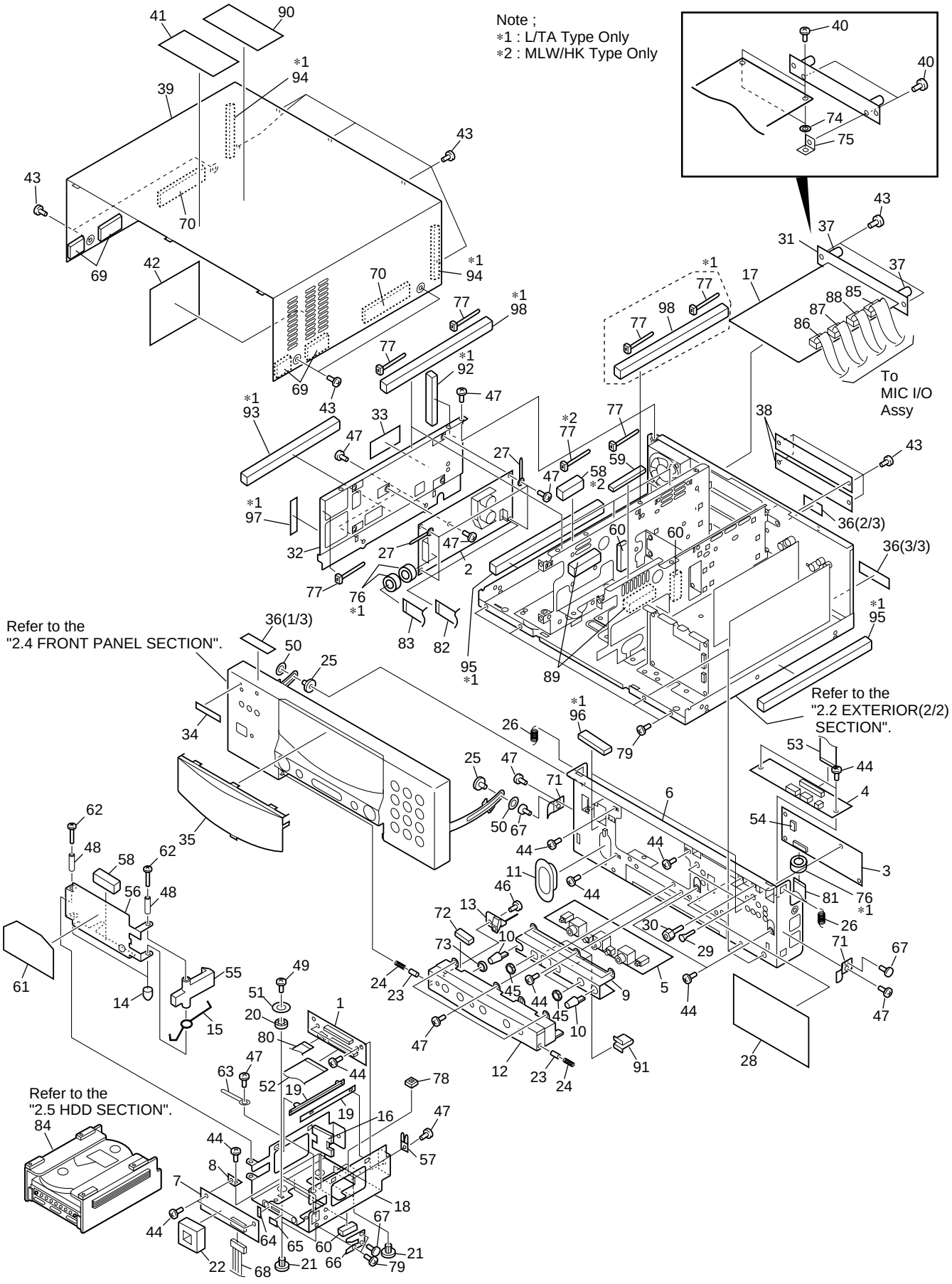
Mark	No.	Description	Part No.
	1	Packing Case	BHD1403
	2	Packing Spacer	BHA1134
	3	Under Pad	BHA1139
⚠	4	Power Cord	See Contrast table (2)
	5	Remote Control Unit	See Contrast table (2)
	6	Cord Set (AUDIO, VIDEO, MIC.)	BDE1059
	7	Packing Sheet	AHG1038
	8	Upper Pad	BHA1140
	9	Mic Panel Cover Setting Instructions	See Contrast table (2)
	10	Operating Instructions	See Contrast table (2)
	11	Connection Diagram	See Contrast table (2)
	12	Operation Sheet	See Contrast table (2)
NSP	13	Literature Bag	AHG-117
	14	• • • • •	
	15	• • • • •	
	16	Mic Panel Cover	BAK1142
NSP	17	Alkaline Dry Cell Battery (LR6, AA)	AEX1007
	18	Air cap Pack	BHG1056
	19	Door Key	DNK1698
	20	Vinyl Bag	BHG1061
	21	Pad	BHA1144
	22	Key Con't Label	See Contrast table (2)

(2) CONTRAST TABLE

L/TA type and MLW/HK type are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.		Remarks
			L/TA Type	MLW/HK Type	
⚠	4	AC Power Cord	BDG1041	BDG1040	
	5	Remote Control Unit	BXD1026	BXD1024	
	9	Mic Panel Cover Setting Instructions (Chinese)	BRH1025	Not used	
	9	Mic Panel Cover Setting Instructions (English)	Not used	BRH1024	
	10	Operating Instructions (Chinese)(for Service)	BRC1006	Not used	
	10	Operating Instructions (English)	Not used	BRB1051	
	11	Connection Diagram (Chinese)(for Service)	BRC1007	Not used	
	11	Connection Diagram (English)	Not used	BRB1052	
	12	Operation Sheet (Chinese)(for Service)	BRH1026	Not used	
	12	Operation Sheet (English)	Not used	BRH1027	
NSP	22	Key Con't Label (Chinese)	BAX1254	Not used	
NSP	22	Key Con't Label (English)	Not used	BAX1255	

2.2 EXTERIOR (1/2) SECTION



(1) EXTERIOR(1/2) SECTION PARTS LIST

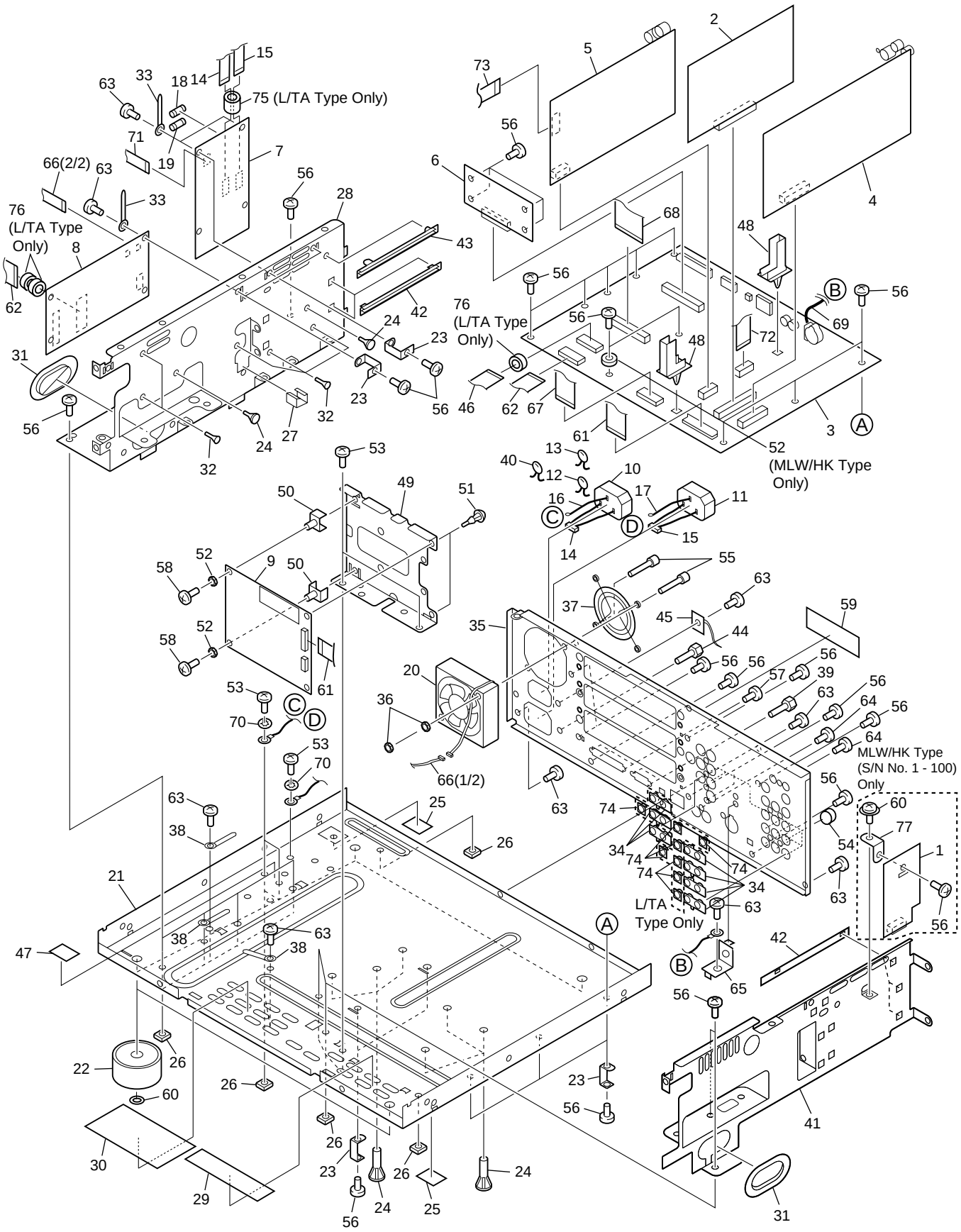
Mark	No.	Description	Part No.
	1	HDD1 Assy	BWZ1833
⚠	2	SW POWER SUPPLY	BXF1075
	3	MENTENANCE1 Assy	BWZ1828
	4	MENTENANCE2 Assy	BWZ1829
	5	MIC Assy	BWZ1860
NSP	6	Panel Stay	BND1136
	7	HDD DETECT Assy	BWZ1840
	8	PCB Metal	BNG1303
NSP	9	Mic Terminal Shield	BNK1103
	10	Echo Knob	BAD1103
NSP	11	Bush C	AEC1740
NSP	12	Mic Panel	See Contrast table (2)
	13	Lens	BMR1141
	14	Stud Cover	AEC7105
	15	Spring	BBH1016
	16	Cushion Rubber A	BEB1072
	17	Harmony Board	BXF1056
NSP	18	HDD Base	BNG1310
NSP	19	PCB Support A	BEC1038
NSP	20	Iso Damp Ring	BMR1131
NSP	21	Iso Damp Bushing	BMR1132
	22	Cushion Rubber	BEB1077
NSP	23	Spindle	BEF1021
NSP	24	Spring	BBH1018
	25	Roller	PNW2468
NSP	26	Opener Spring	BBH1012
	27	Binder	AEP-215
NSP	28	Maintenance Panel Label	See Contrast table (2)
	29	PCB Holder	BEC1124
	30	Hexagonal Screw	BBA1028
	31	Panel (HAMORI)	BNG1311
NSP	32	Power Supply Case	BND1137
NSP	33	Label	BAX1166
	34	Name Plate	BAM1003
	35	Display Panel	BAK1134
NSP	36	Serial/Bar Code Sheet	BAX1210
	37	Terminal Screw	AKE-031
	38	Panel Board	BNG1309
	39	Bonnet	BNE1084
	40	Screw	BBT30P060FZK
NSP	41	HD Caution Label	BAX1219
NSP	42	Net	BAS1026
	43	Screw	BCT30P060FZK
	44	Screw	ABA1011
	45	Nut	BBN1006
	46	Screw	BPZ30P080FZK
	47	Screw	BCZ30P060FCU
	48	Spindle	BEF1022
NSP	49	Dumper Screw	BBA1049
	50	Washer	WT36D120D050
	51	Washer	BBE1017
	52	Connector Cable (40P)	BDE1055
	53	Lead With Housing (24P)	BDX1511
	54	Remote Sensor Unit	BXX1014
	55	Hook	BMR1148
	56	HDD Cover	BNG1305
	57	Ground Plate	BNK1099
	58	Gasket 9.5	BEC1200
	59	Gasket 3.2	BEC1201
	60	Gasket	BEC1205
	61	HD Caution Label 2	See Contrast table (2)
	62	Screw (3×36)	ABA7003
	63	Binder	AEC-826
	64	Spacer	BEC1207
	65	Rubber	BEB1084
	66	Stay	BNG1322
	67	Rivet A	BEC1158
	68	Lead with Housing (3P)	BDX1532
	69	Side Spacer A	BEC1195
	70	Side Spacer B	BEC1196
	71	Shield Finger	BNK1108
	72	Cushion Rubber B	BEB1073
	73	Cushion Rubber D	BEB1078
	74	Washer	ABE-053
	75	PCB Metal	BNG1257
	76	Ferrite Core	BTX1013
	77	Binder	AEC-093
	78	Spacer	BEB1059
	79	Screw	ABA1048
	80	Lead with Housing (4P)	BDX1538
	81	Lead with Housing	See Contrast table (2)
	82	Lead with Housing (5P)	BDX1536
	83	Lead with Housing (8P)	BDX1516
	84	HDD Assy	BWX1125
	85	Lead Housing (5P)	BDX1504
	86	Lead Housing (9P)	BDX1505
	87	Lead Housing (4P)	BDX1506
	88	Lead Housing (3P)	BDX1507
	89	HDD Cushion	See Contrast table (2)
	89	Shield Form	See Contrast table (2)
	90	Caution Label	BAX1242
	91	Ground Finger (1 piece)	BNK1120
	92	Shield Form	See Contrast table (2)
	93	Shield Form	See Contrast table (2)
	94	Shield Form	See Contrast table (2)
	95	Shield Form	See Contrast table (2)
	96	Shield Form	See Contrast table (2)
	97	Shield Form	See Contrast table (2)
	98	Shield Form	See Contrast table (2)

(2) CONTRAST TABLE

L/TA type and MLW/HK type are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.		Remarks
			L/TA Type	MLW/HK Type	
NSP	12	Mic Panel	BMR1151	BMR1150	
NSP	28	Maintenance Panel Label	BAX1220	BAX1227	
	61	HD Caution Label 2	BAX1223	BAX1230	
	81	Lead with Housing	BDX1547	BDX1544	
	89	HDD Cushion	Not used	BEB1075	
	89	Shield Form	BEC1219	Not used	
	92	Shield Form	BEC1208	Not used	
	93	Shield Form	BEC1209	Not used	
	94	Shield Form	BEC1211	Not used	
	95	Shield Form	BEC1213	Not used	
	96	Shield Form	BEC1214	Not used	
	97	Shield Form	BEC1216	Not used	
	98	Shield Form	BEC1220	Not used	

2.3 EXTERIOR (2/2) SECTION



(1) EXTERIOR (2/2) SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	BOOT ROM Assy	See Contrast table (2)
	2	3D Assy	BWX1105
	3	MAIN Assy	See Contrast table (2)
	4	AV I/O Assy	See Contrast table (2)
	5	MIC I/O Assy	BWZ1831
	6	MOTHER Assy	BWZ1832
	7	POWER I/O Assy	BWZ1866
	8	STB POWER Assy	BWZ1858
	9	MIDI SOUND GENERATE MODULE	BXF1053
⚠	10	AC Inlet 1P	AKP1089
⚠	11	AC Outlet 1P	AKP1088
⚠	12	Ceramic Capacitor (C8002)	BCG1017
⚠	13	Ceramic Capacitor (C8001)	BCG1017
NSP	14	Lead With Housing (4P)	BDX1537
NSP	15	Lead With Housing (5P)	BDX1536
NSP	16	Ground Wire (J8218)	BDX1534
NSP	17	Ground Wire (J8217)	BDX1534
⚠	18	Fuse (FU1 : 2.5A/125V)	REK1102
⚠	19	Fuse (FU2 : 2.5A/125V)	REK1102
	20	Fan Motor	AXM1019
NSP	21	Chassis	BNA1144
	22	Leg Assy	AEC1142
NSP	23	Metal Plate	BNG1275
NSP	24	Card Space A	BEC1120
NSP	25	Aluminum Label	BAX1149
	26	Spacer	BEB1059
	27	Edge Saddle	AEC1571
NSP	28	Power Supply Cover	BND1145
	29	Net B	BAS1027
	30	Net C	BAS1025
NSP	31	Bush C	AEC1740
NSP	32	PCB Holder	AEC1097
	33	Binder	AEC-826
NSP	34	Ground Plate (2P)	ANK1156
	35	Rear Panel	See Contrast table (2)

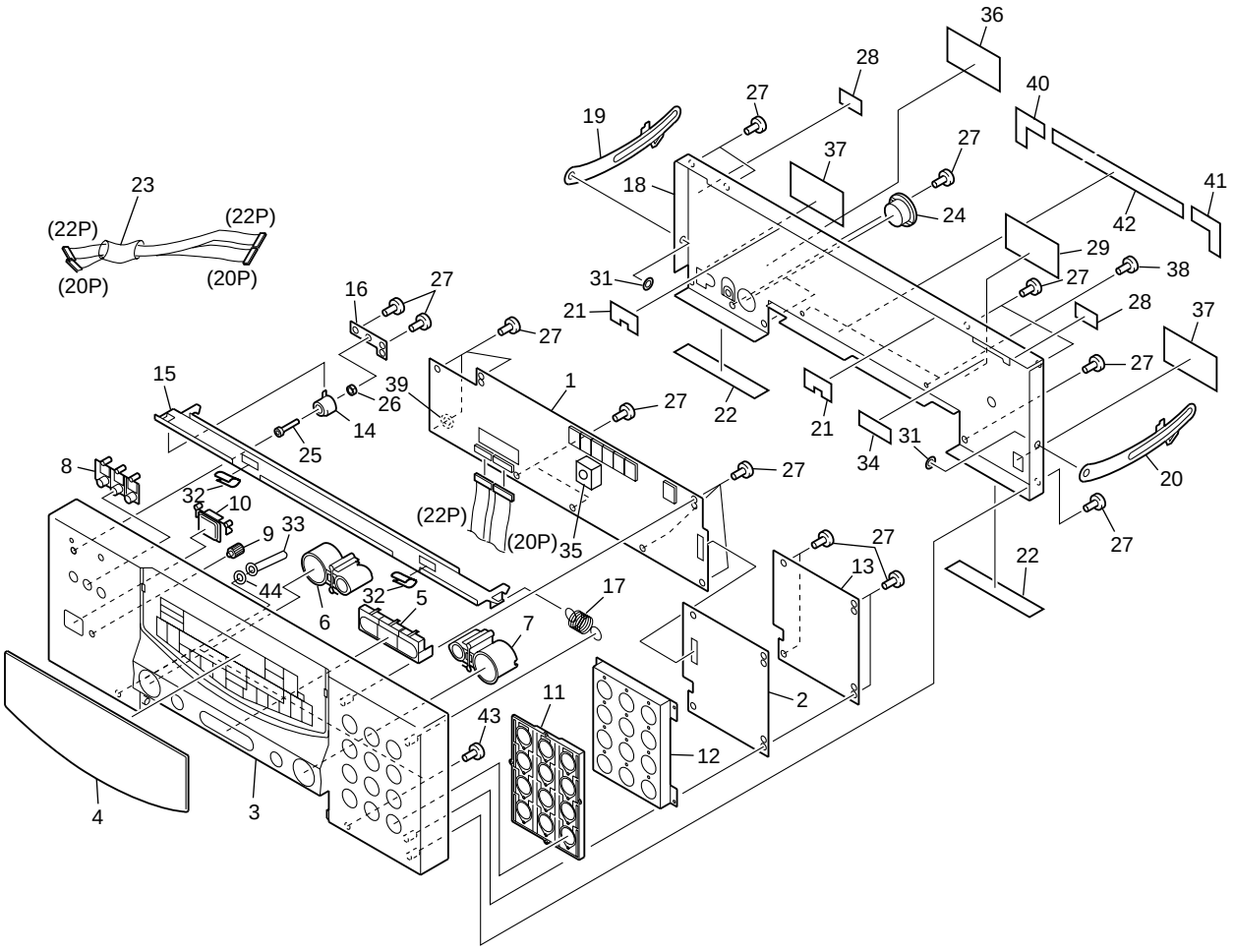
Mark	No.	Description	Part No.
	36	Nut	NB40FMC
NSP	37	Fan Guard	BNF1020
	38	Binder	AEP-215
	39	Hexagonal Screw	BBA1028
⚠	40	Ceramic Capacitor (C8003)	BCG1017
NSP	41	Center Stay	BND1146
NSP	42	PCB Support A	BEC1038
NSP	43	Guide Rail EX	BEC1185
⚠	44	Terminal Screw	BKE1003
NSP	45	Cable Clip	BEC1204
	46	Lead with Housing (20P)	See Contrast table (2)
NSP	47	Earth Label	BAX1014
	48	Card Corner Holder	BEC1144
NSP	49	ONGEN Plate	BNG1284
NSP	50	PCB Mold	AMR2115
	51	PCB Holder	BEC1124
	52	Washer	See Contrast table (2)
	53	Screw	ABA1074
	54	Pin Jack Cap	DEC2130
	55	Screw	BMZ40P350FZK
	56	Screw	ABA1011
	57	Screw	BMZ25P060FMC
	58	Screw	BBZ30P140FZK
	59	ID Label	BAX1232
	60	Rubber Sheet	BEB1086
	61	Lead With Housing (14P)	BDX1502
	62	Lead With Housing (20P)	See Contrast table (2)
	63	Screw	BCZ30P060FCU
	64	Screw	BPZ30P080FZK
	65	PCB Metal	BNG1257
	66	Lead with Housing (2P)	BDX1501
	67	Lead with Housing (24P)	BDX1511
	68	Connector Cable (40P)	BDE1055
	69	Lead with Housing	BDX1533
	70	Washer	WG40FCC
	71	Lead with Housing (3P)	BDX1500
	72	Lead with Housing (3P)	BDX1532
	73	Lead with Housing (15P)	BDX1503
	74	Ground Plate	ANK1074
	75	Ferrite Core	See Contrast table (2)
	76	Ferrite Core	See Contrast table (2)
	77	PCB Metal	See Contrast table (2)
	78	Screw	See Contrast table (2)

(2) CONTRAST TABLE

L/TA type and MLW/HK type are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.		Remarks
			L/TA Type	MLW/HK Type	
	1	BOOT ROM Assy	Not used	BWZ1839 *	S/N No. 1 -100 Only
	3	MAIN Assy	BWP1039	BWP1035	
	4	AV I/O Assy	BWZ1870	BWZ1830	
	35	Rear Panel	BNC1128	BNC1129	
	46	Lead with Housing	BDX1547	BDX1544	
	52	Washer	Not used	ABF1016	
	62	Lead with Housing (20P)	BDX1551	BDX1508	
	75	Ferrite Core	ATX1034	Not used	
	76	Ferrite Core	BTX1013	Not used	
	77	PCB Metal	Not used	BNG1303 *	S/N No. 1 -100 Only
	78	Screw	Not used	ABA1200 *	S/N No. 1 -100 Only

2.4 FRONT PANEL SECTION



(1) FRONT PANEL SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	FRONT Assy	See Contrast table (2)
	2	10 KEY Assy	See Contrast table (2)
NSP	3	Front Panel	See Contrast table (2)
	4	Display Sheet	See Contrast table (2)
	5	Key Control Knob	BAD1112
	6	Start. Stop Knob	See Contrast table (2)
	7	Clear. Memory Knob	See Contrast table (2)
	8	3 Succession Knob	BAD1100
	9	Lens	BMR1053
	10	Power Knob	BAD1127
	11	10 Key Knob	BAD1126
NSP	12	LED Holder 1	DNK2918
	13	PVC Sheet	See Contrast table (2)
	14	Protect Key	BMR1145
NSP	15	Protect Stay	BND1144
NSP	16	Protect Plate	BNG1293
NSP	17	Spring Use Only Key	BBH1017
NSP	18	Front Assy Shield	BNK1104
	19	Door Arm L	PNB1500
	20	Door Arm R	PNB1501
NSP	21	Sheet	BAK1124
NSP	22	Cushion	BEB1069
	23	Lead with Housing	See Contrast table (2)
	24	One-Touch Bush	BEC1199
NSP	25	Hexagonal Bolt	BBA1057
	26	Nut	NB50FMC
	27	Screw	BPZ30P080FZK
	28	Caution Label	See Contrast table (2)
	29	Set Up SW Label	See Contrast table (2)
	30	• • • • •	
	31	Washer	WT26D047D035
	32	Clip Finger (MET)	BNK1088
	33	Binder	AEP-215
	34	Cushion Rubber C	BEB1074
	35	Remote Sensor Unit	BXX1014
	36	• • • • •	
NSP	37	Aluminum Label	BAX1208
	38	Screw	BCZ30P060FCU
	39	Washer	WA32F120M080
	40	Cushion Rubber E	BEB1080
	41	Cushion Rubber F	BEB1081
	42	Cushion Rubber G	BEB1082
	43	Screw	BPZ30P120FMC
	44	Washer	ABE-053

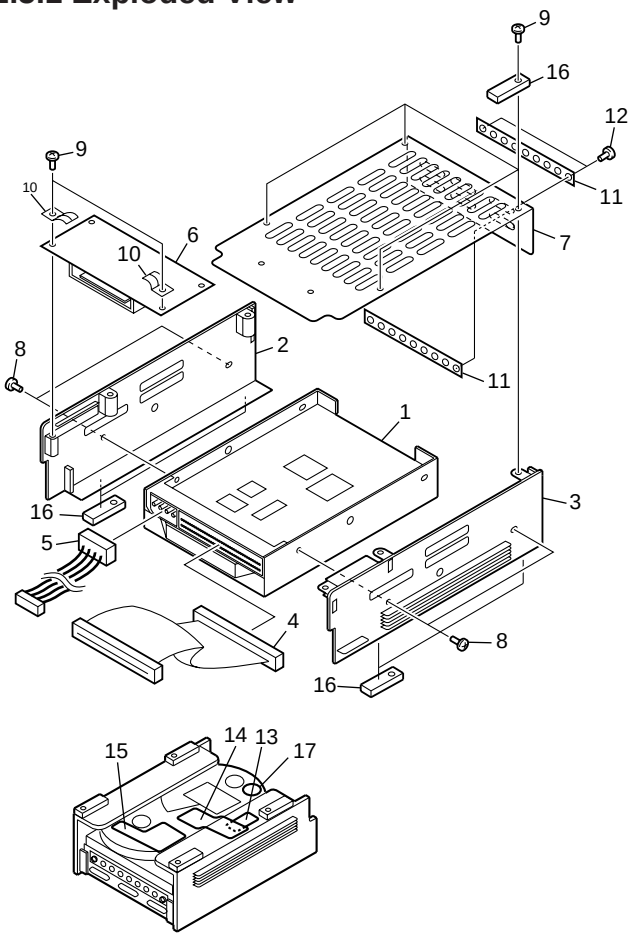
(2) CONTRAST TABLE

L/TA type and MLW/HK type are constructed the same except for the following :

Mark	No.	Symbol and Description	Part No.		Remarks
			L/TA Type	MLW/HK Type	
	1	FRONT Assy	BWZ1869	BWZ1827	
	2	10 KEY Assy	BWZ1871	BWZ1859	
NSP	3	Front Panel	BMB1058	BMB1059	
	4	Display Sheet	BAK1141	BAK1143	
	6	Start. Stop Knob	BAD1128	BAD1130	
	7	Clear. Memory Knob	BAD1129	BAD1131	
	13	PVC Sheet	BEC1218	BEC1189	
	23	Lead with Housing	BDX1547	BDX1544	
	28	Caution Label	BAX1225	BAX1231	
	29	Set Up SW Label	BAX1221	BAX1228	
NSP	36	Diagram Sheet of HDD	BAX1222	BAX1229	

2.5 HDD SECTION

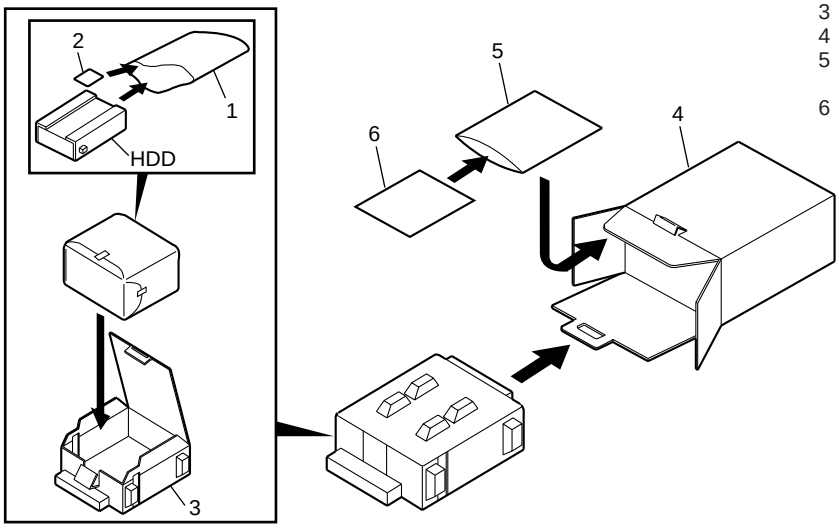
2.5.1 Exploded View



● HDD SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	HDD	BXF1076
	2	Guide Rail L	BMR1142
	3	Guide Rail R	BMR1143
	4	Connector Cable (40P)	BDE1055
NSP	5	Lead With Housing (4P)	BDX1513
	6	HDD2 Assy	BWZ1834
	7	Guard Plate	BNG1299
	8	Screw	BBA1030
	9	Screw	BPZ30P080FZK
	10	Ground Plate	BNK1099
	11	Nylon	BEC1202
	12	Button	BEC1203
	13	S/N Label (PAP)	BAX1189
	14	Seal Label S	BAX1238
	15	HD Caution Label 3	BAX1234
	16	HDD Rubber 2	BEB1079
	17	Label	BAX1111

2.5.2 Packing



● PACKING PARTS LIST

Mark	No.	Description	Part No.
	1	Conductor Pack	BHG1060
NSP	2	Silica Gel	AEN7001
	3	HDD Pad	BHA1143
	4	Packing Case	BHD1409
	5	Literature Bag	AHG-117
	6	Instruction Manual	BRA1147

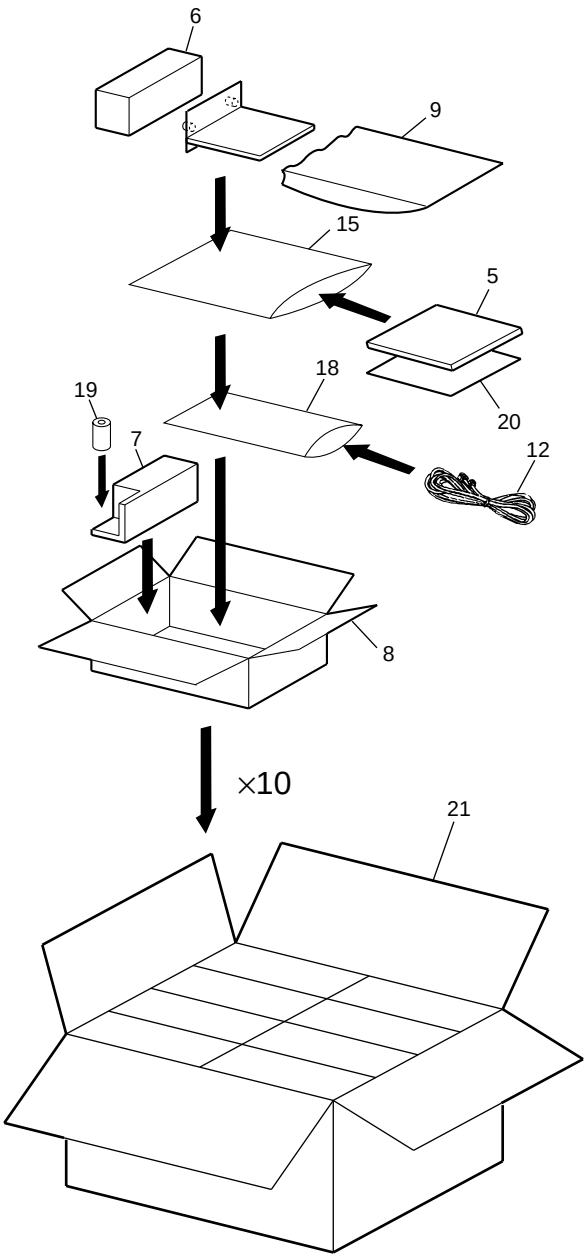
● PARTS LIST for SERVICE

Mark	Description	Part No.	Remark
	Hard Disc Unit 5	BWU1018	×1
	├ Carton Case	BHD1408	×1
	│		
	└ Hard Disc Unit	BWU1017	×5
	├ HDD	BXF1076	×1
	├ HDD I/F Assy	BWU1019	×1
	├ Connector Cable 40P	BDE1055	×1
	├ Guard Plate	BNG1299	×1
	├ HDD Rubber 2	BEB1079	×8
	├ Nyron	BEC1202	×2
	├ Button	BEC1203	×2
	├ Guide Rail L	BMR1142	×1
	├ Guide Rail R	BMR1143	×1
	├ Ground Plate	BNK1099	×2
	├ Seal Label S	BAX1238	×1
	├ S/N Label	BAX1189	×1
	├ Screw	BBA1030	×4
	├ Screw	BPZ30P080FZK	×6
	├ Instruction Manual	BRA1147	×1
	├ HDD Pad	BHA1143	×1
	├ Packing Case	BHD1409	×1
	└ Conductor Pack	BHG1060	×1

An exclusive packing material is prepared for supply the Hard Disc (BXF1076) with the simple substance.

	Packing Assy	BZH1544	×1
	├ Packing Case	• • • • •	×1
	├ Cusion	• • • • •	×2
	└ Spacer	• • • • •	×1

2.6 MMD-V700

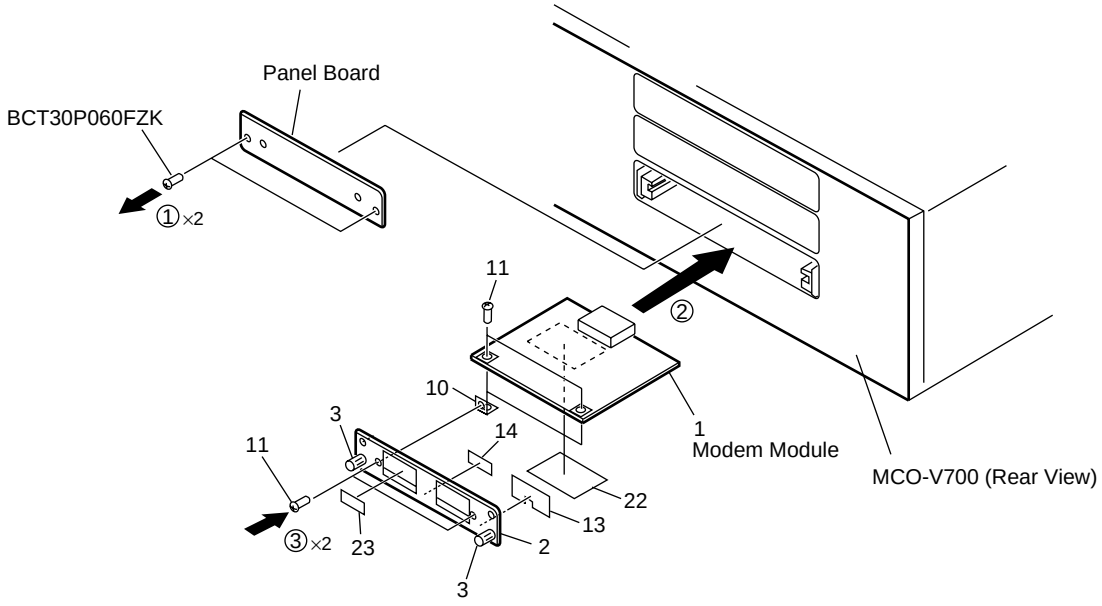


● MMD-V700 PARTS LIST

Mark	No.	Description	Part No.
	1	Modem Module	BXF1081
	2	Modem Panel	BNG1306
	3	Terminal Screw	AKE-031
	4	• • • • •	
	5	Operating Instructions (Chinese)	BRA1149
	6	Pat	BHA1125
	7	Space Pad	BHA1138
	8	Packing Case	BHD1398
	9	Air Cap Bag	BHG1046
	10	PCB Metal	BNG1257
	11	Screw	BBT30P060FZK
	12	Moduler Cable	BDE1032
	13	Sheet	BAK1124
	14	Serial Sheet	AAX1322
	15	Literature Bag	AHG-117
	16	• • • • •	
	17	• • • • •	
	18	Packing Bag	AHG1162
	19	Ferrite Core	ATX1031
	20	Correction	BRX1028
	21	Carton Case	BHD1411
	22	Label (Taiwan)	BAX1247
	23	Label (Hog kong)	BAX1248

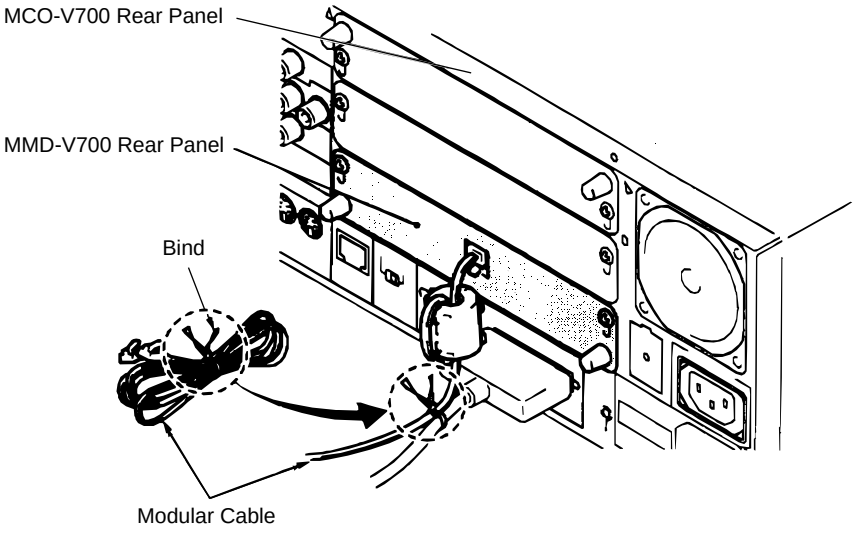
■ Instllation

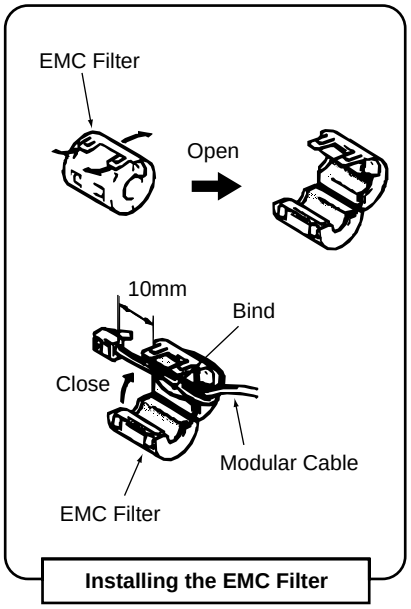
Note : The numbers denote measuring number in the Parts List.



■ Install the EMC Filter before Connecting the Modular Cable

To reduce the radio frequency emission from the equipment, install the provided EMC (electromagnetic compatibility) filter as described in the following.



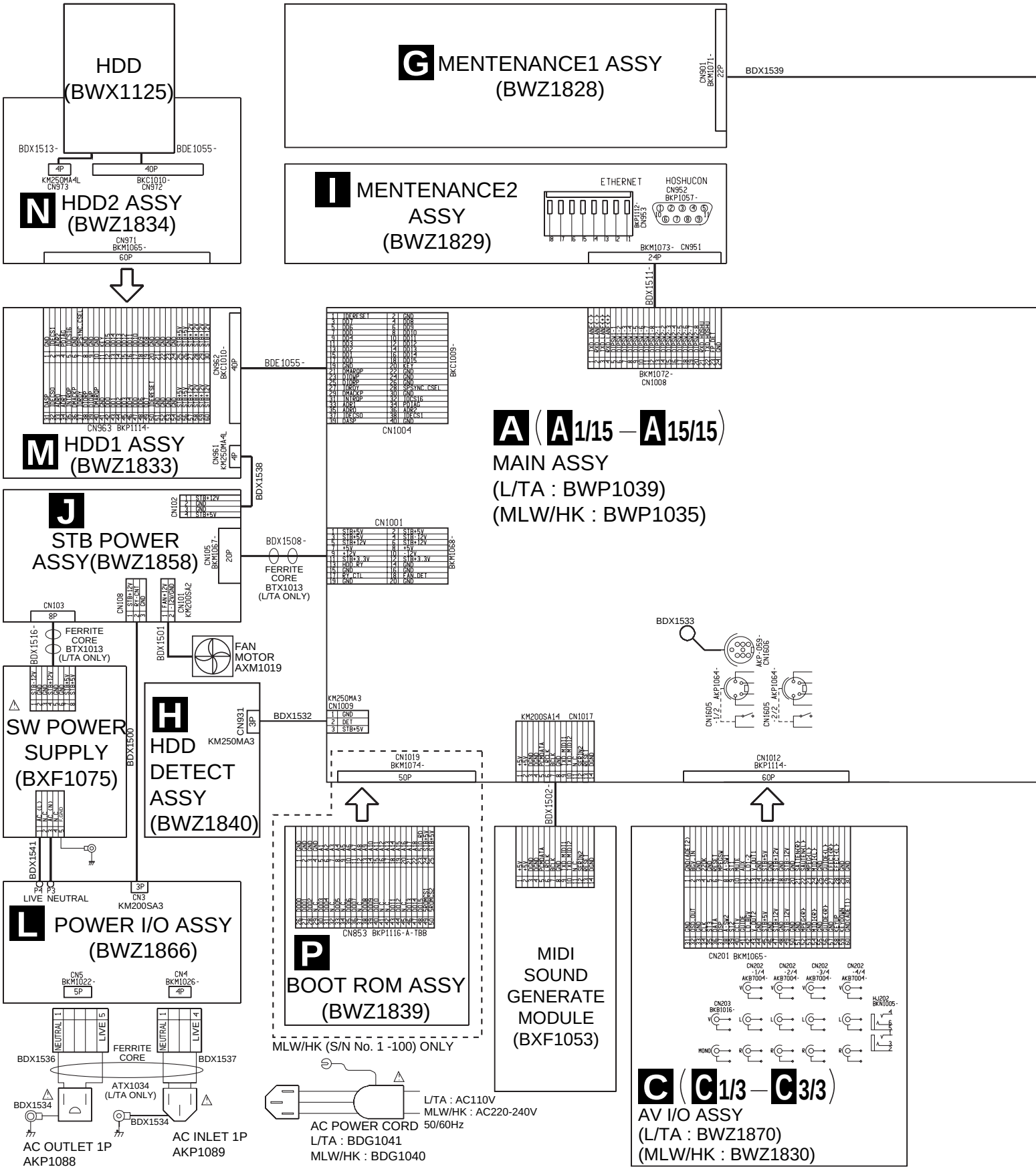


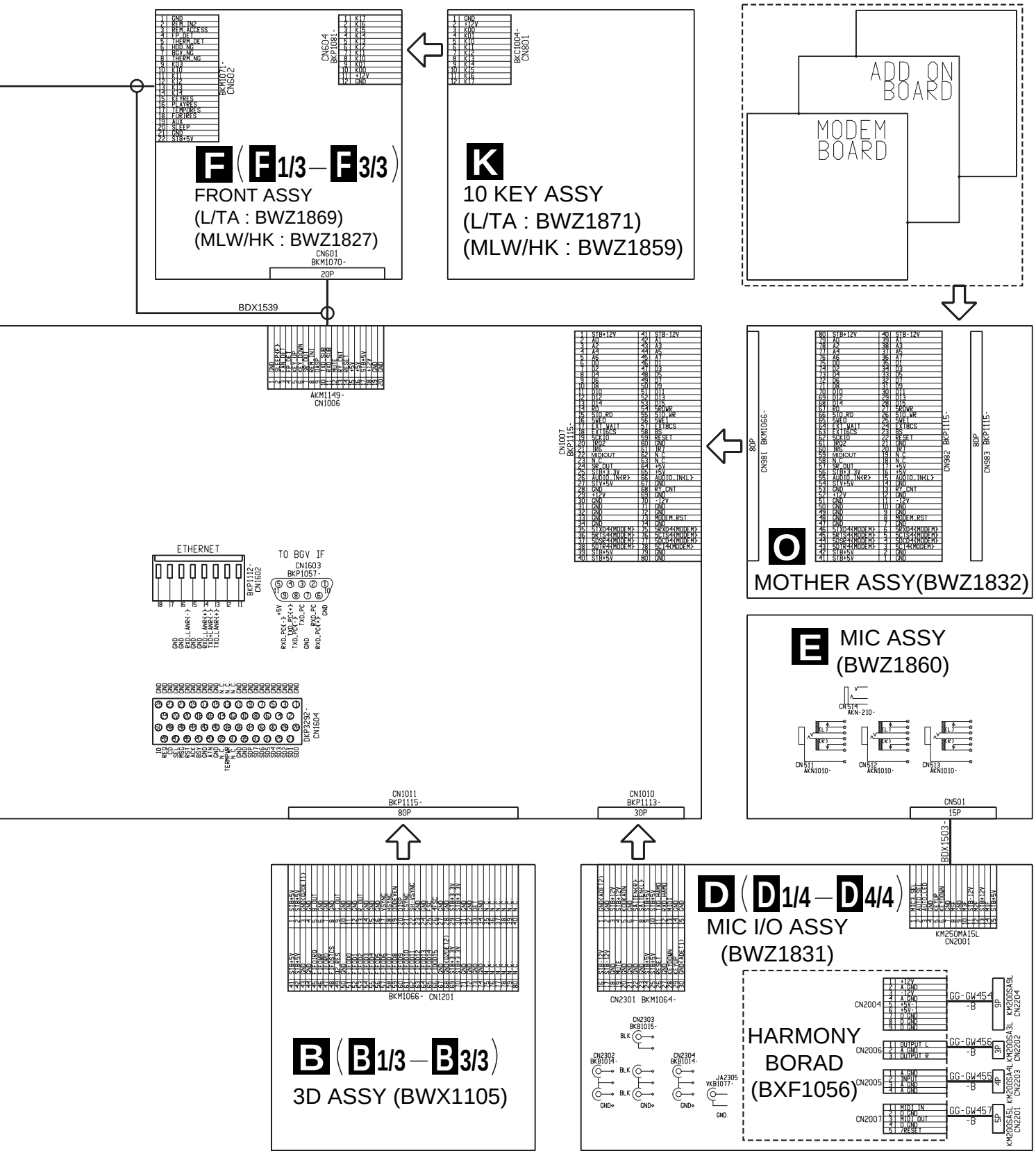
Installing the EMC Filter

3. SCHEMATIC DIAGRAM

3.1 OVERALL WIRING DIAGRAM

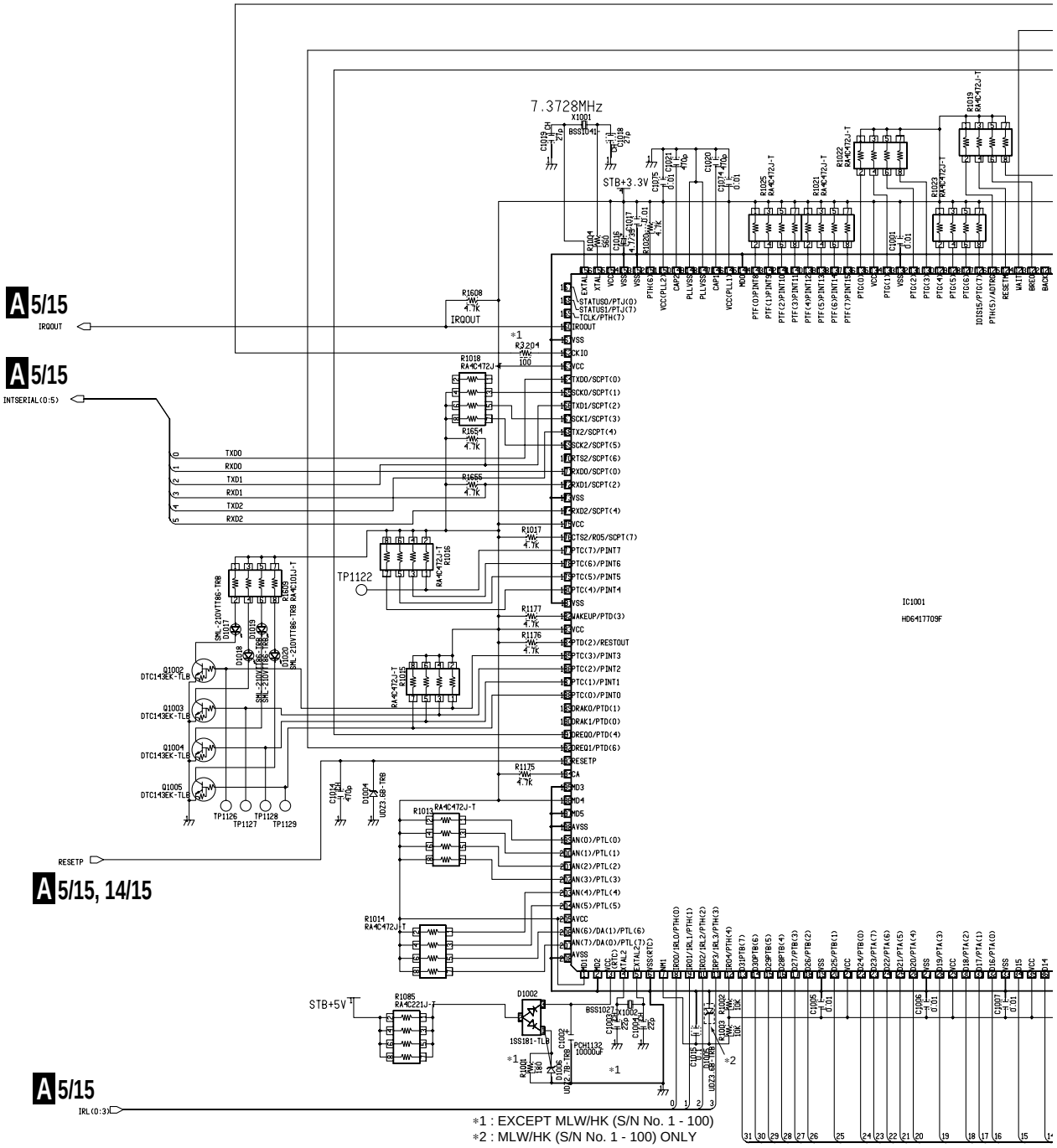
Note : When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".

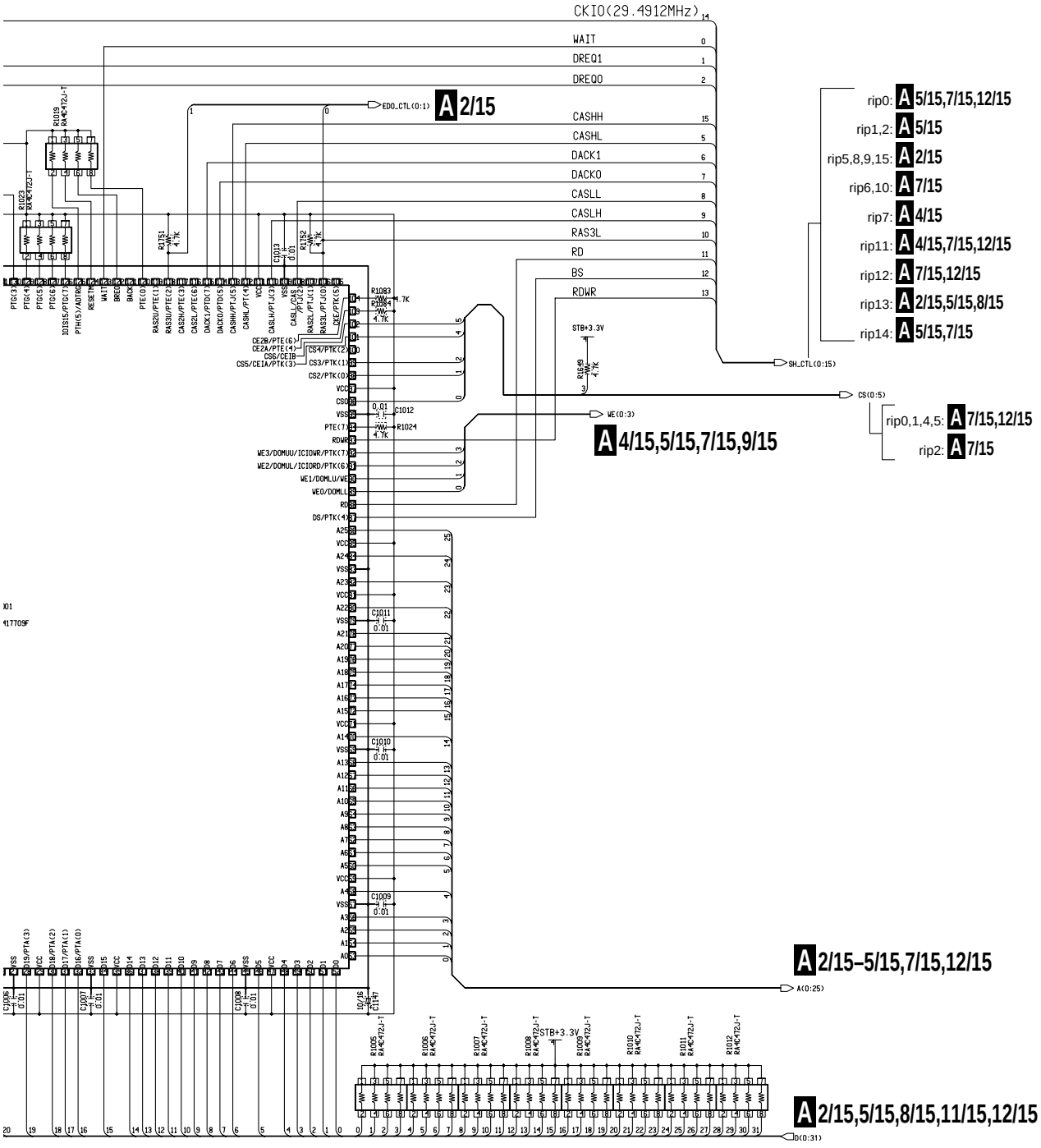



F (F1/3 – F3/3)
FRONT ASSY
(L/TA : BWZ1869)
(MLW/HK : BWZ1827)
K
10 KEY ASSY
(L/TA : BWZ1871)
(MLW/HK : BWZ1859)
ADD ON BOARD
MODEM BOARD
O
MOTHER ASSY(BWZ1832)
E
MIC ASSY
(BWZ1860)
D (D1/4 – D4/4)
MIC I/O ASSY
(BWZ1831)
HARMONY BORAD
(BXF1056)
B (B1/3 – B3/3)
3D ASSY (BWX1105)
BDX1539
BDX1503
ETHERNET
TO BGV IF

3.2 MAIN ASSY (1/15)

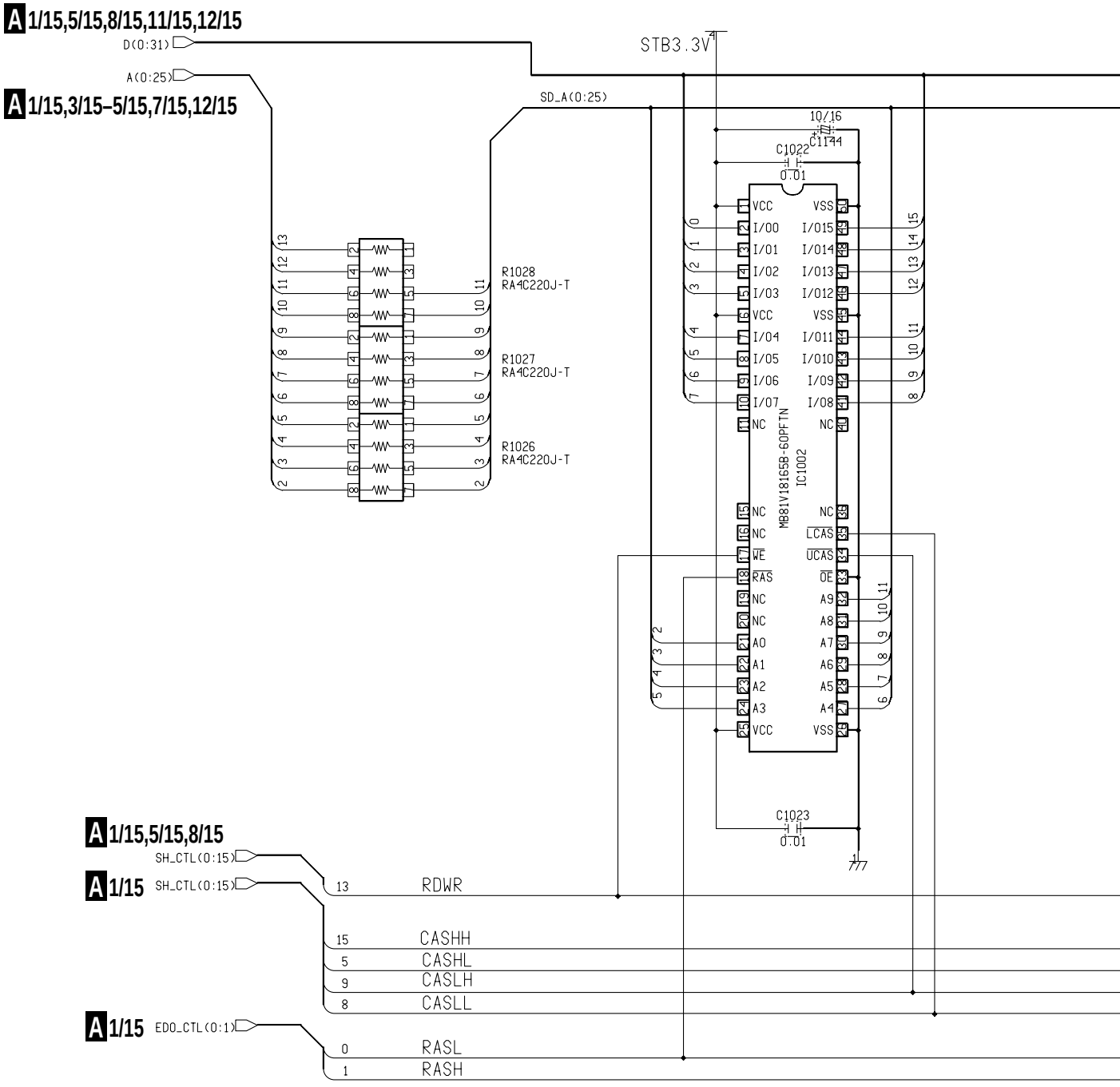
A 1/15 MAIN ASSY(1/15)
(L/TA : BWP1039)
(MLW/HK : BWP1035)

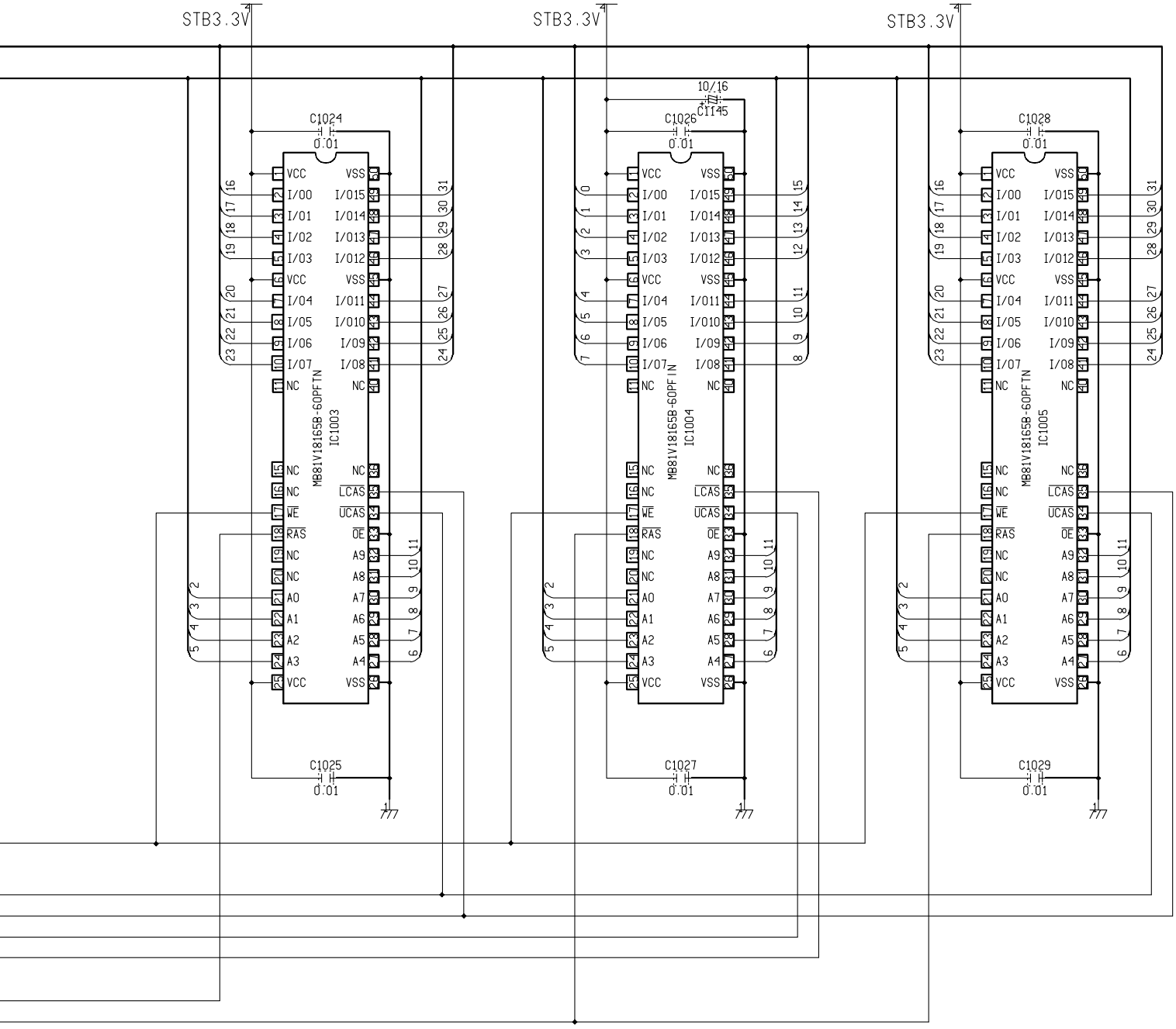



CKIO(29.4912MHz)
WAIT
DREQ1
DREQ0
EDO_CTL(0:1)
A 2/15
CASHH
CASHL
DACK1
DACK0
CASLL
CASLH
RAS3L
RD
BS
RDWR
SH_CTL(0:15)
rip0: A 5/15,7/15,12/15
rip1,2: A 5/15
rip5,8,9,15: A 2/15
rip6,10: A 7/15
rip7: A 4/15
rip11: A 4/15,7/15,12/15
rip12: A 7/15,12/15
rip13: A 2/15,5/15,8/15
rip14: A 5/15,7/15
STB+3.3V
CS(0:5)
rip0,1,4,5: A 7/15,12/15
rip2: A 7/15
WE(0:3)
A 4/15,5/15,7/15,9/15
A 2/15–5/15,7/15,12/15
A(0:25)
A 2/15,5/15,8/15,11/15,12/15
D(0:31)

3.3 MAIN ASSY (2/15)

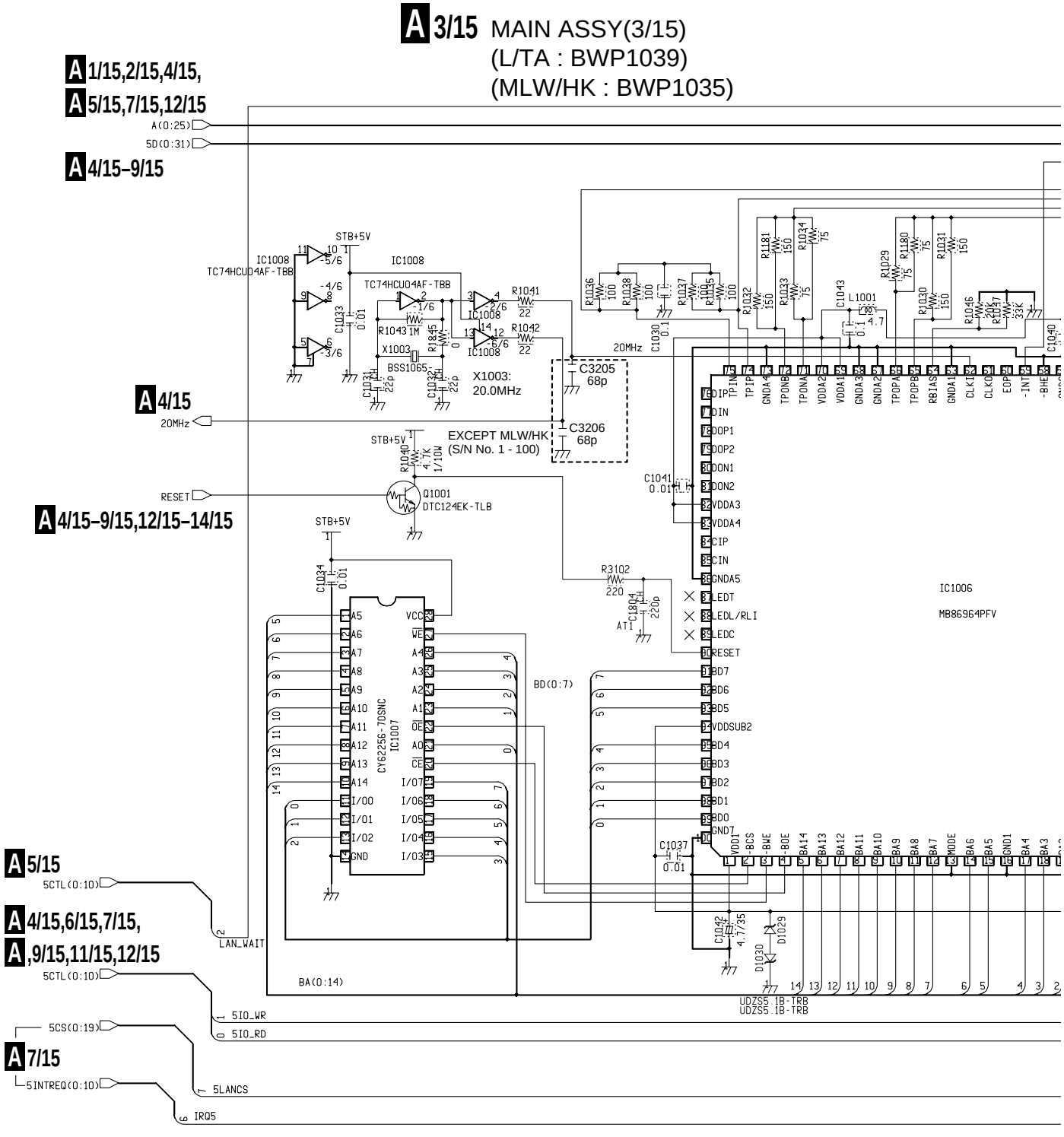
A 2/15 MAIN ASSY(2/15)
(L/TA : BWP1039)
(MLW/HK : BWP1035)



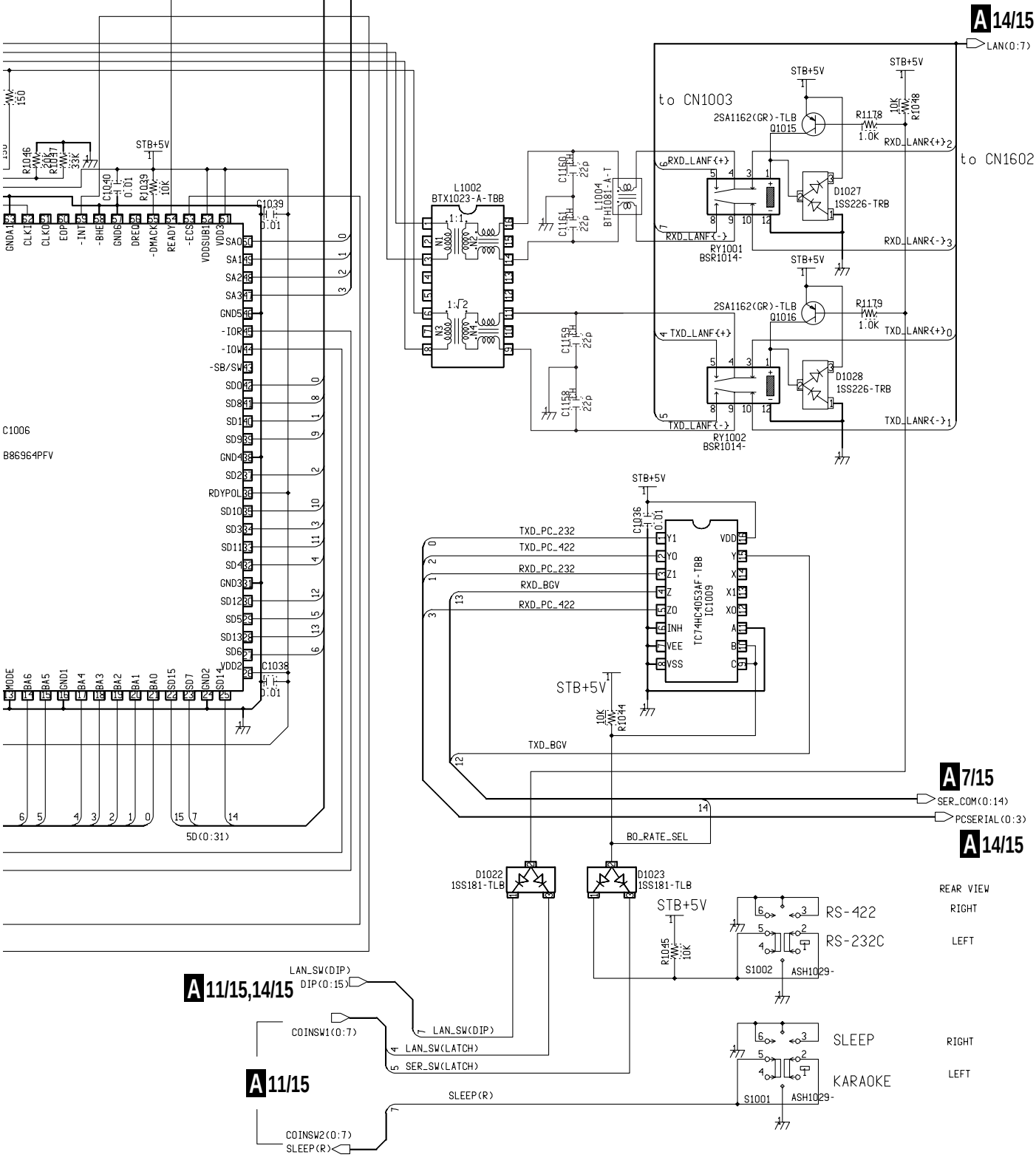


EDO-DRAM BLOCK

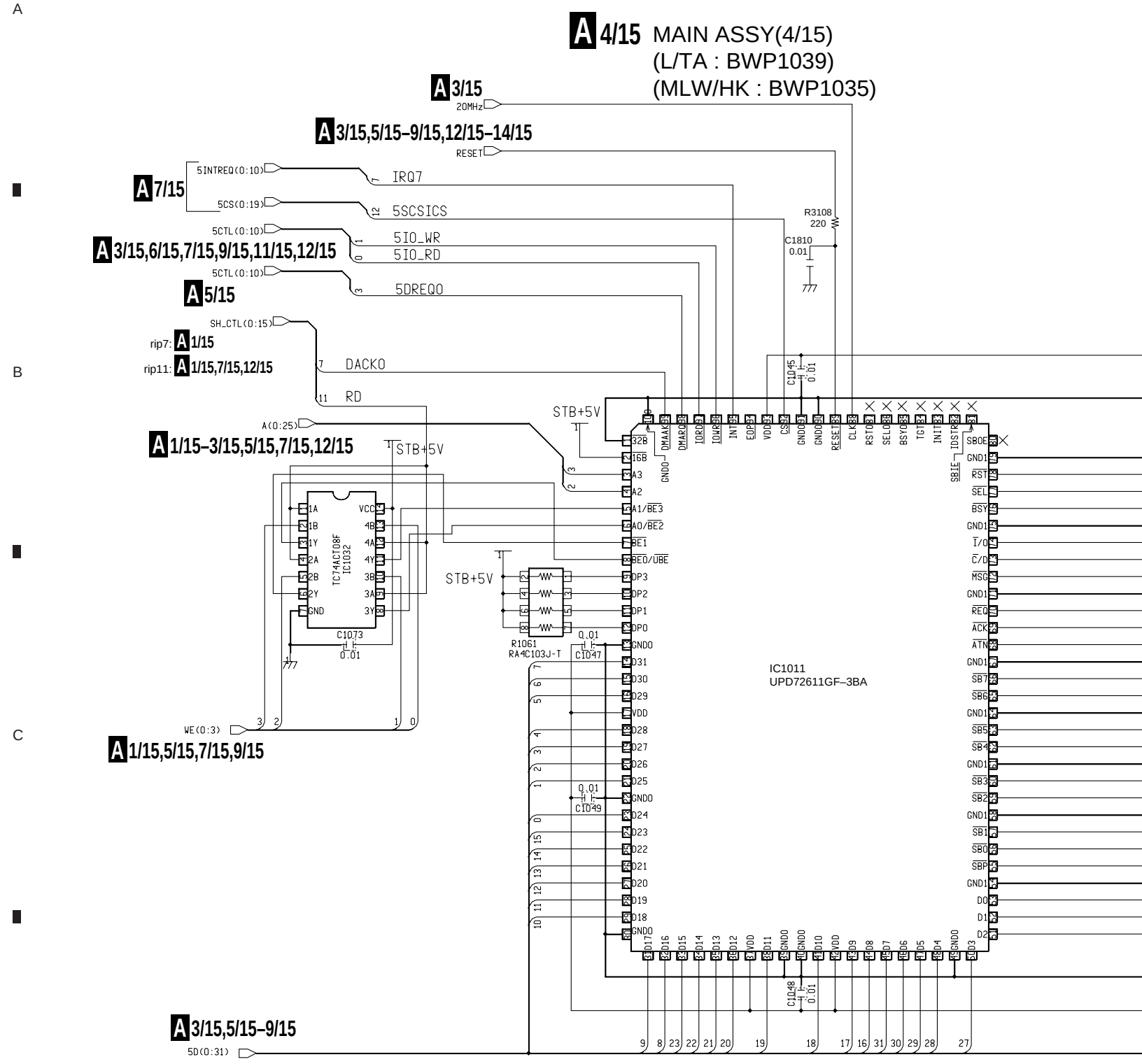
3.4 MAIN ASSY (3/15)



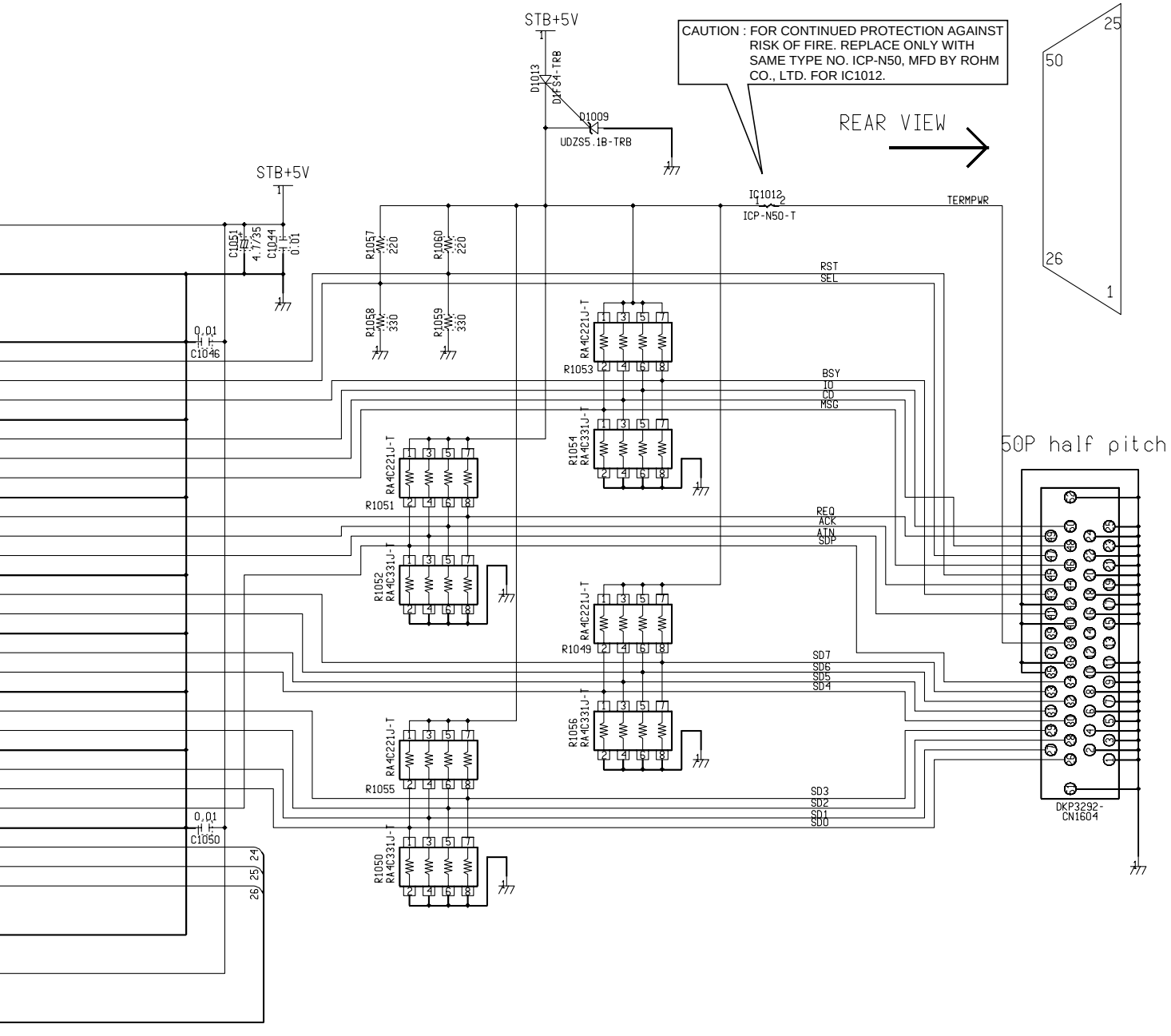
LAN DRV


A14/15
LAN(0:7)
to CN1003
to CN1602
2SA1162(GR)-TLB
Q1015
Q1016
D1027
1SS226-TRB
D1028
1SS226-TRB
RY1001
BSR1014-
RY1002
BSR1014-
L1002
BTX1023-A-TBB
L1004
BTH1081-A-T
C1006
B86964PFV
5D(0:31)
TC74HC4053AF-TBB
IC1009
TXD_PC_232
TXD_PC_422
RXD_PC_232
RXD_BGV
RXD_PC_422
TXD_BGV
A7/15
SER_COM(0:14)
PCSERIAL(0:3)
A14/15
BO_RATE_SEL
D1022
1SS181-TLB
D1023
1SS181-TLB
REAR VIEW
RIGHT
RS-422
LEFT
RS-232C
S1002
ASH1029-
A11/15,14/15
LAN_SW(DIP)
DIP(0:15)
COINSW1(0:7)
LAN_SW(DIP)
LAN_SW(LATCH)
SER_SW(LATCH)
A11/15
SLEEP(R)
COINSW2(0:7)
SLEEP(R)
SLEEP
KARAOKE
S1001
ASH1029-
RIGHT
LEFT

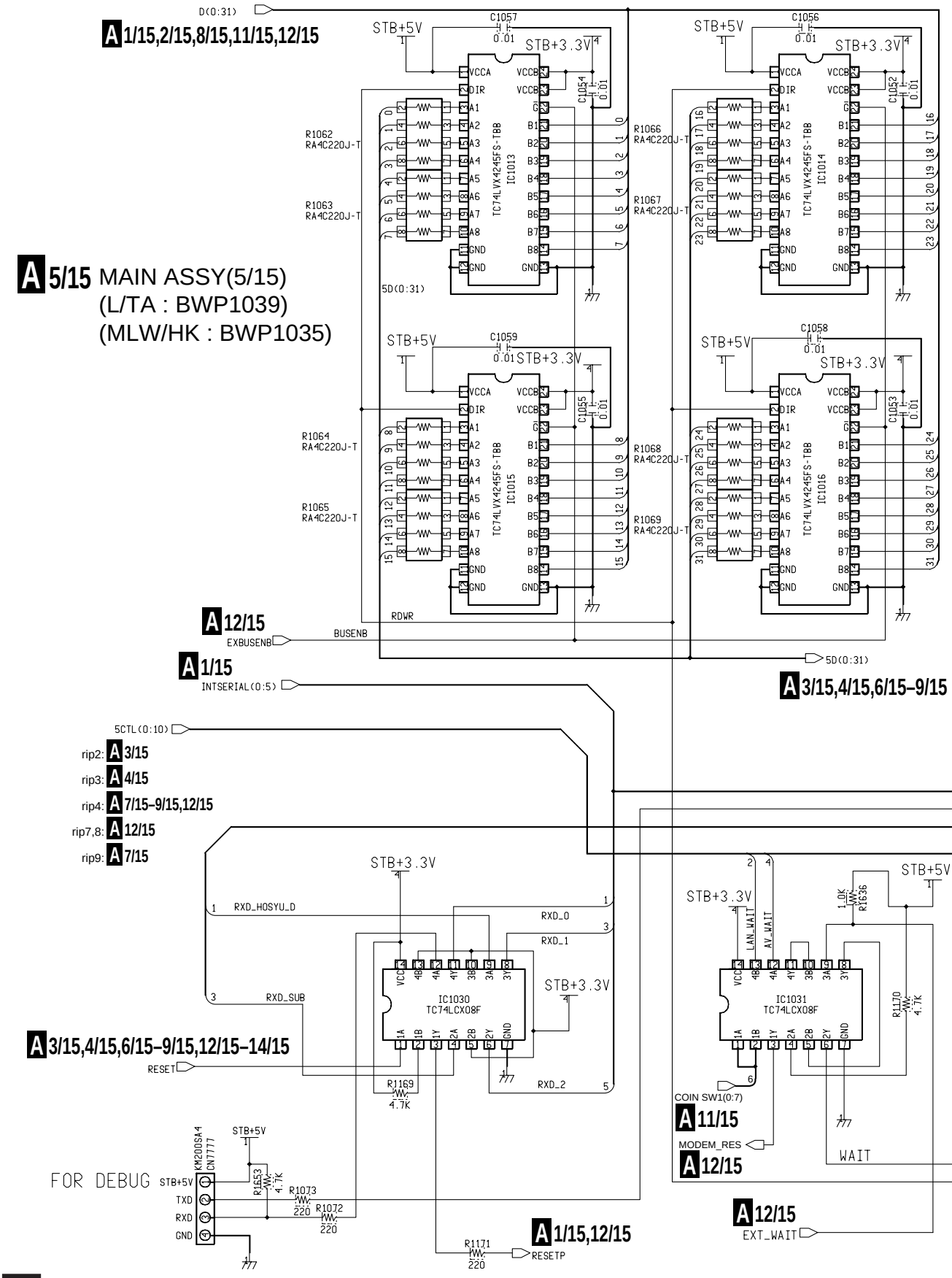
3.5 MAIN ASSY (4/15)



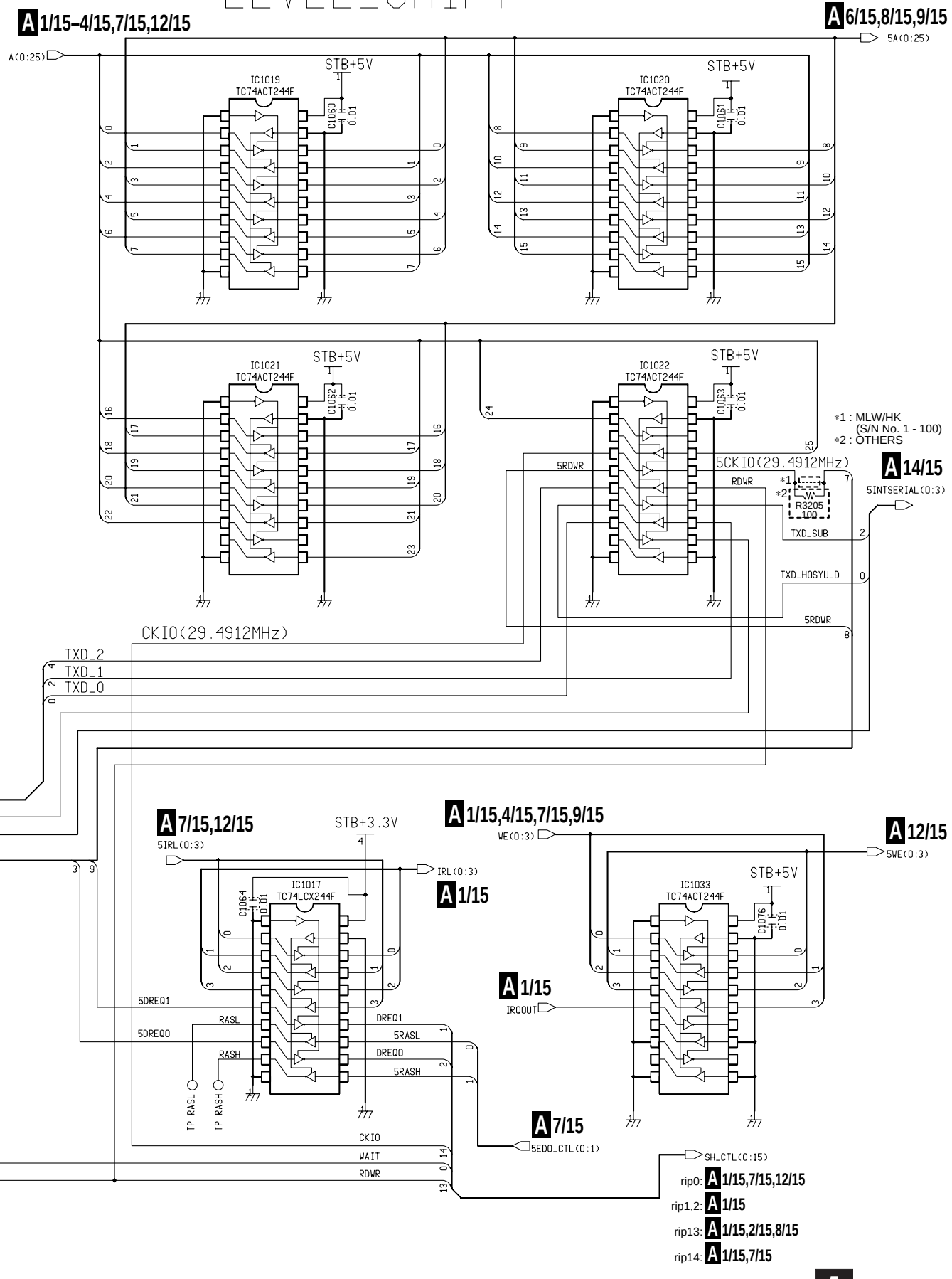
SCSI BLOCK


STB+5V
D1013
D1FS4-TRB
D1009
UDZS5.1B-TRB
CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE NO. ICP-N50, MFD BY ROHM CO., LTD. FOR IC1012.
REAR VIEW
25
50
26
1
IC1012
ICP-N50-T
TERMPWR
C1051
4.7/35
C1044
0.01
R1057
220
R1060
220
R1058
330
R1059
330
RST
SEL
C1046
R1053
RA4C221J-T
BSY
IO
CD
MSG
R1054
RA4C331J-T
50P half pitch
R1051
RA4C221J-T
REQ
ACK
ATN
SDP
R1052
RA4C331J-T
R1049
RA4C221J-T
SD7
SD6
SD5
SD4
R1056
RA4C331J-T
R1055
RA4C221J-T
SD3
SD2
SD1
SD0
C1050
R1050
RA4C331J-T
DKP3292-
CN1604

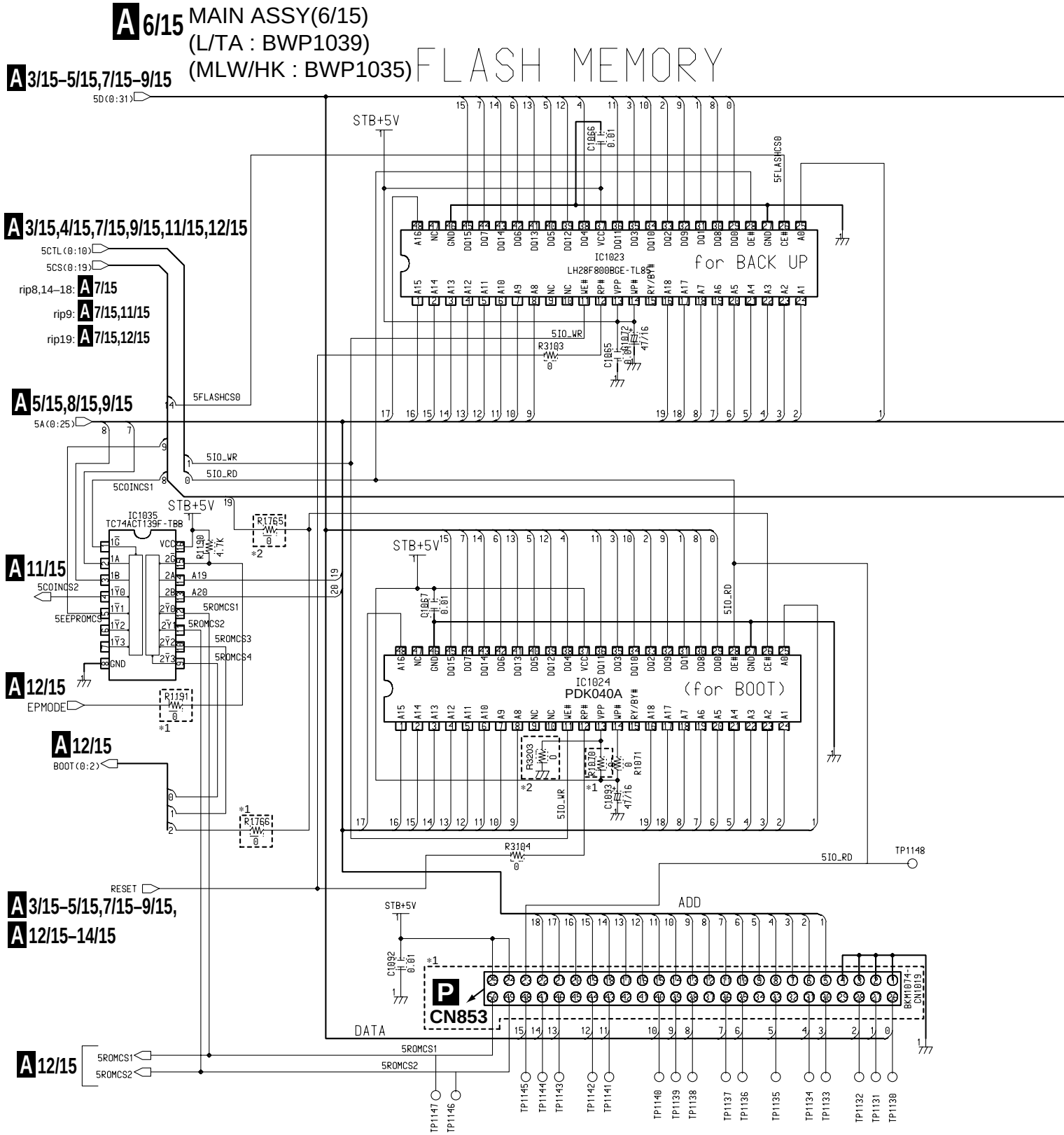
3.6 MAIN ASSY (5/15)



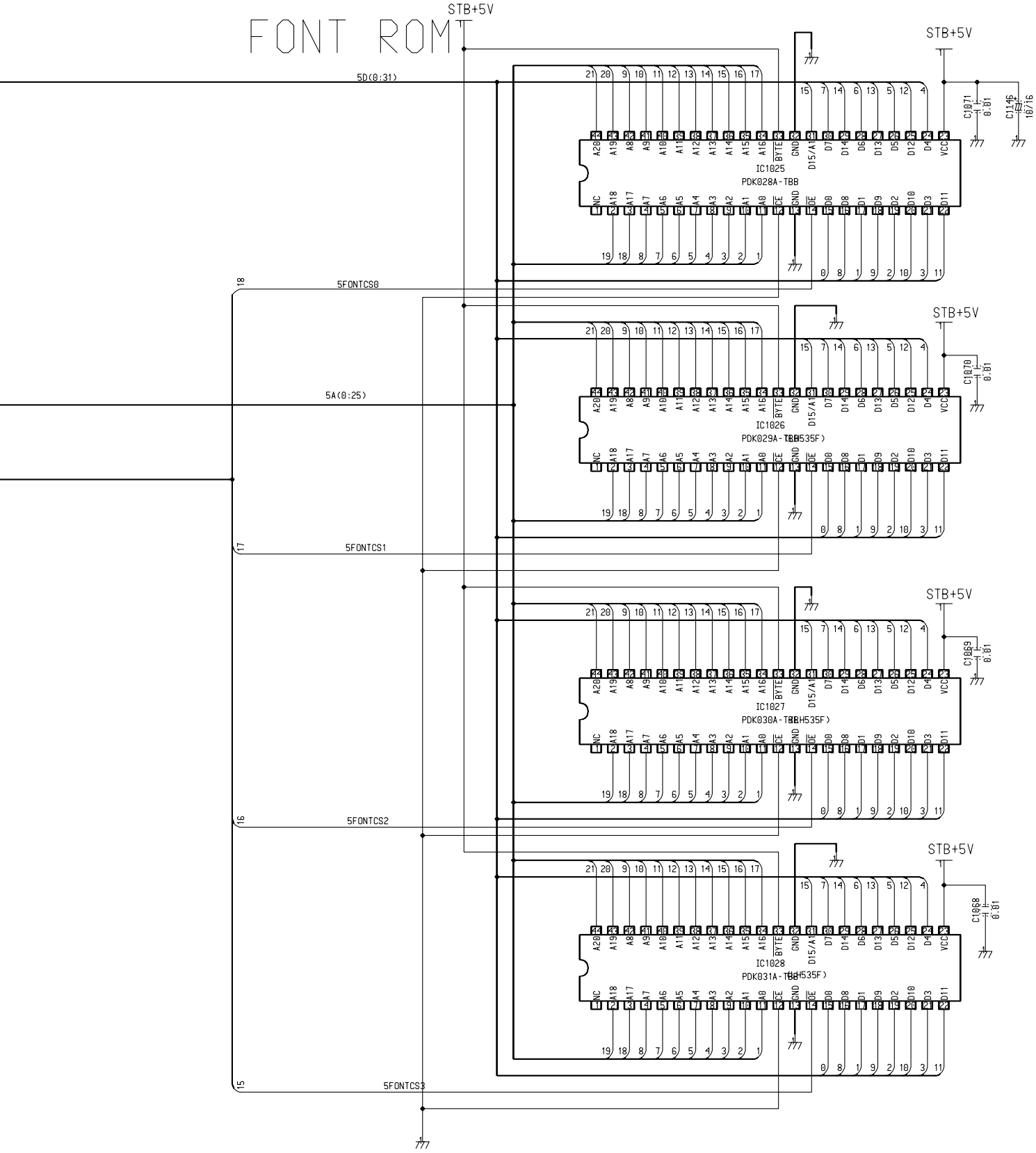
LEVEL_SHIFT


A 1/15–4/15,7/15,12/15
A(0:25)
A 6/15,8/15,9/15
5A(0:25)
IC1019
TC74ACT244F
IC1020
TC74ACT244F
IC1021
TC74ACT244F
IC1022
TC74ACT244F
STB+5V
C1060 0.01
C1061 0.01
C1062 0.01
C1063 0.01
*1 : MLW/HK (S/N No. 1 - 100)
*2 : OTHERS
5CKIO(29.4912MHz)
5RDWR
RDWR
R3205 100
A 14/15
5INTSERIAL(0:3)
TXD_SUB
TXD_HOSYU_D
CKIO(29.4912MHz)
TXD_2
TXD_1
TXD_0
A 7/15,12/15
5IRL(0:3)
STB+3.3V
IRL(0:3)
A 1/15
IC1017
TC74LCX244F
C1064 0.01
5DREQ1
5DREQ0
RASL
RASH
DREQ1
5RASL
DREQ0
5RASH
TP RASL
TP RASH
CKIO
WAIT
RDWR
A 1/15,4/15,7/15,9/15
WE(0:3)
A 12/15
5WE(0:3)
IC1033
TC74ACT244F
C1076 0.01
A 1/15
IRQOUT
A 7/15
5EDO_CTL(0:1)
SH_CTL(0:15)
rip0: A 1/15,7/15,12/15
rip1,2: A 1/15
rip13: A 1/15,2/15,8/15
rip14: A 1/15,7/15

3.7 MAIN ASSY (6/15)

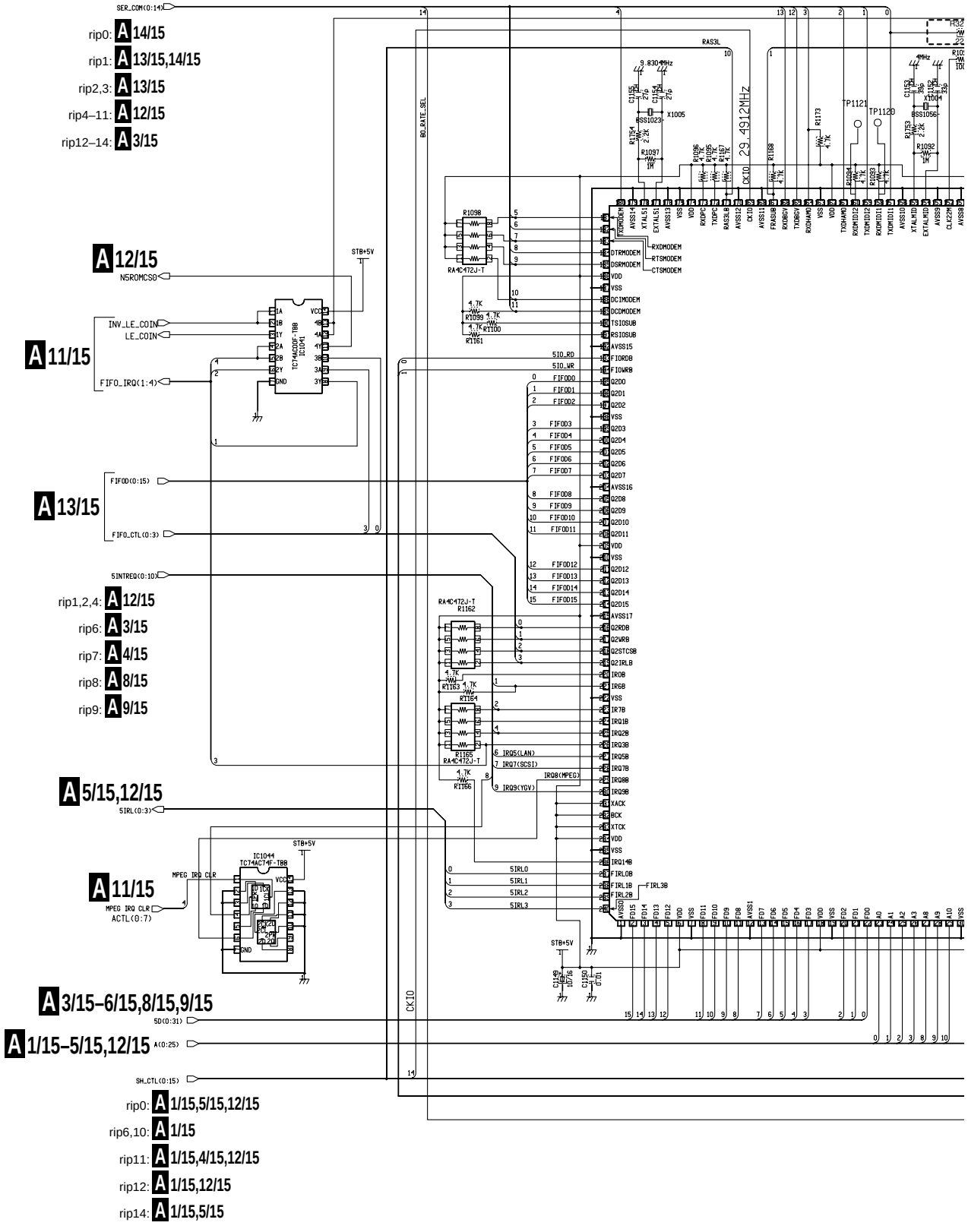


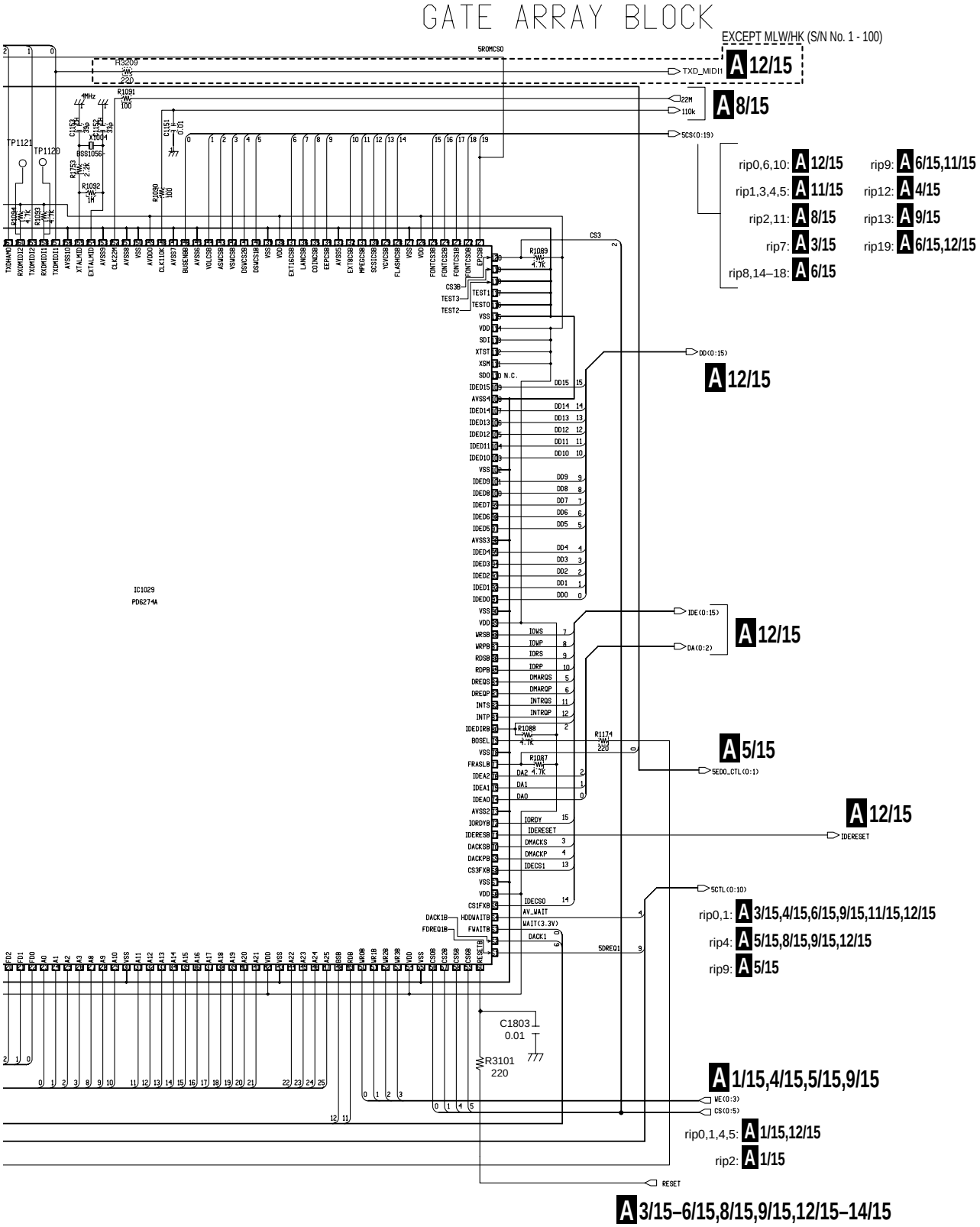
∗1 : MLW/HK
(S/N No. 1 - 100) ONLY
∗2 : OTHERS ONLY


FONT ROM
STB+5V
5D(0:31)
5A(0:25)
5FONTCS0
5FONTCS1
5FONTCS2
5FONTCS3
IC1025
PDK028A-TBB
IC1026
PDK029A-TBB(35F)
IC1027
PDK030A-TBB(35F)
IC1028
PDK031A-TBB(35F)
C1071
C1146
C1070
C1069
C1068

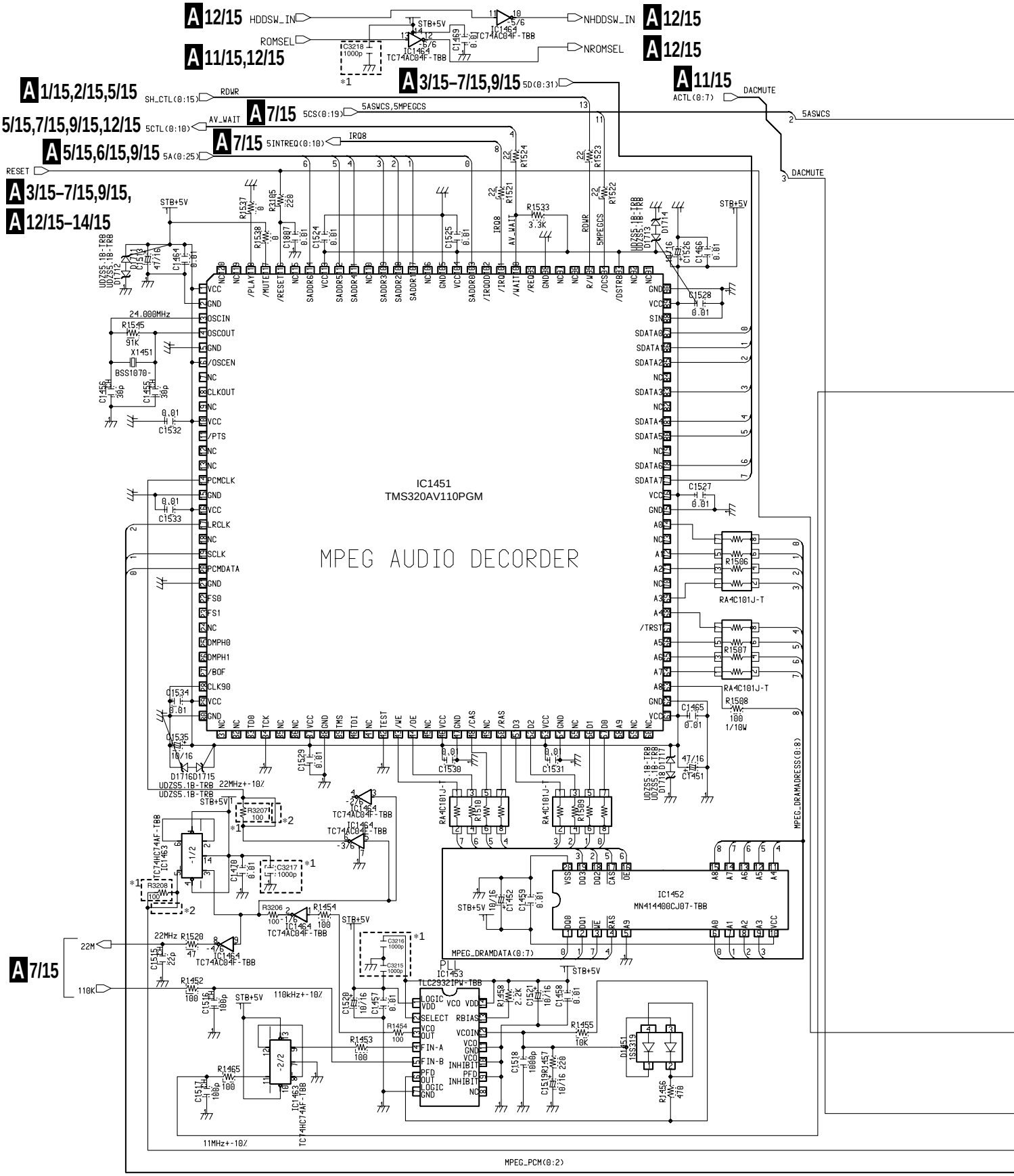
3.8 MAIN ASSY (7/15)

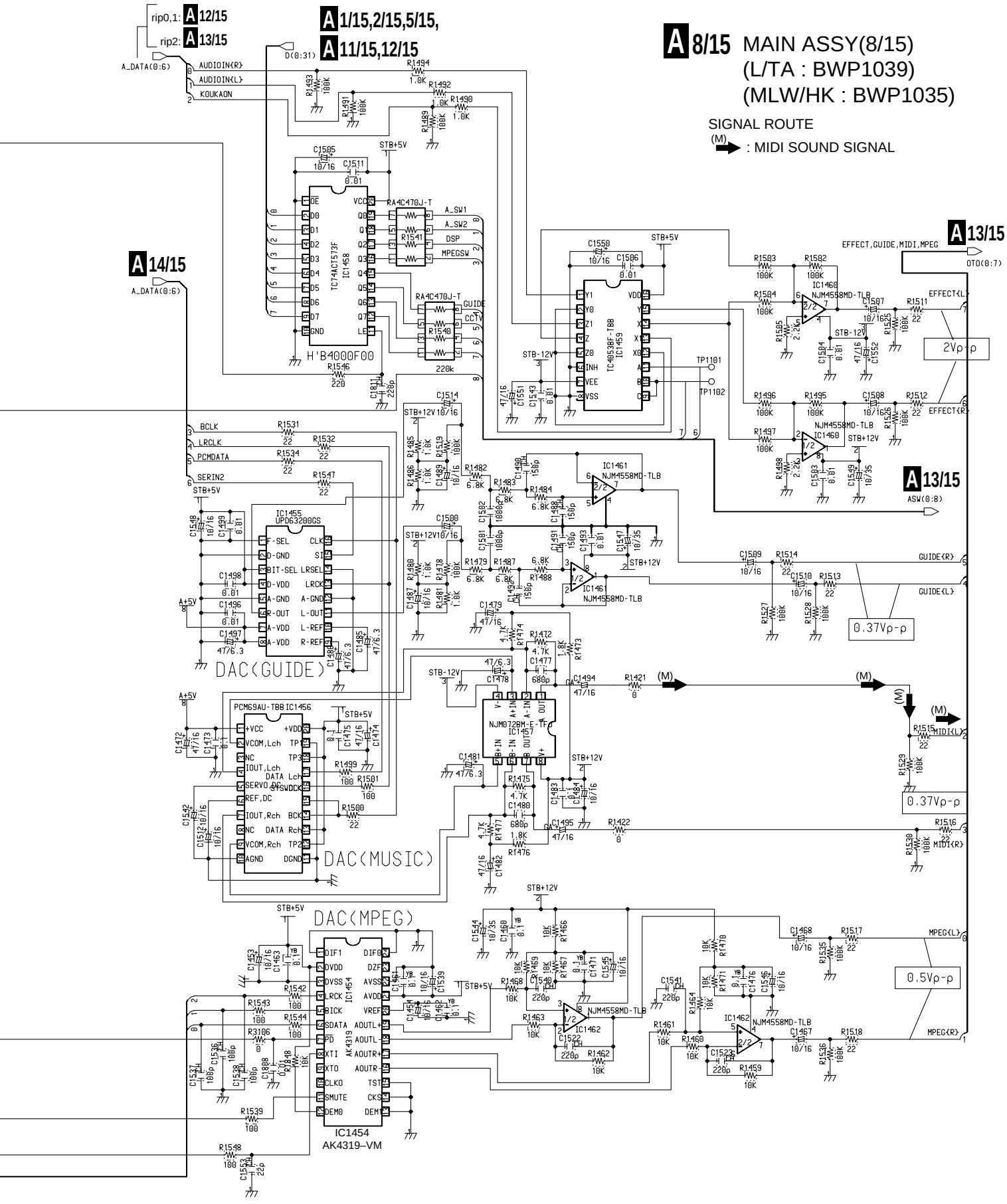
A 7/15 MAIN ASSY(7/15)
(L/TA : BWP1039)
(MLW/HK : BWP1035)



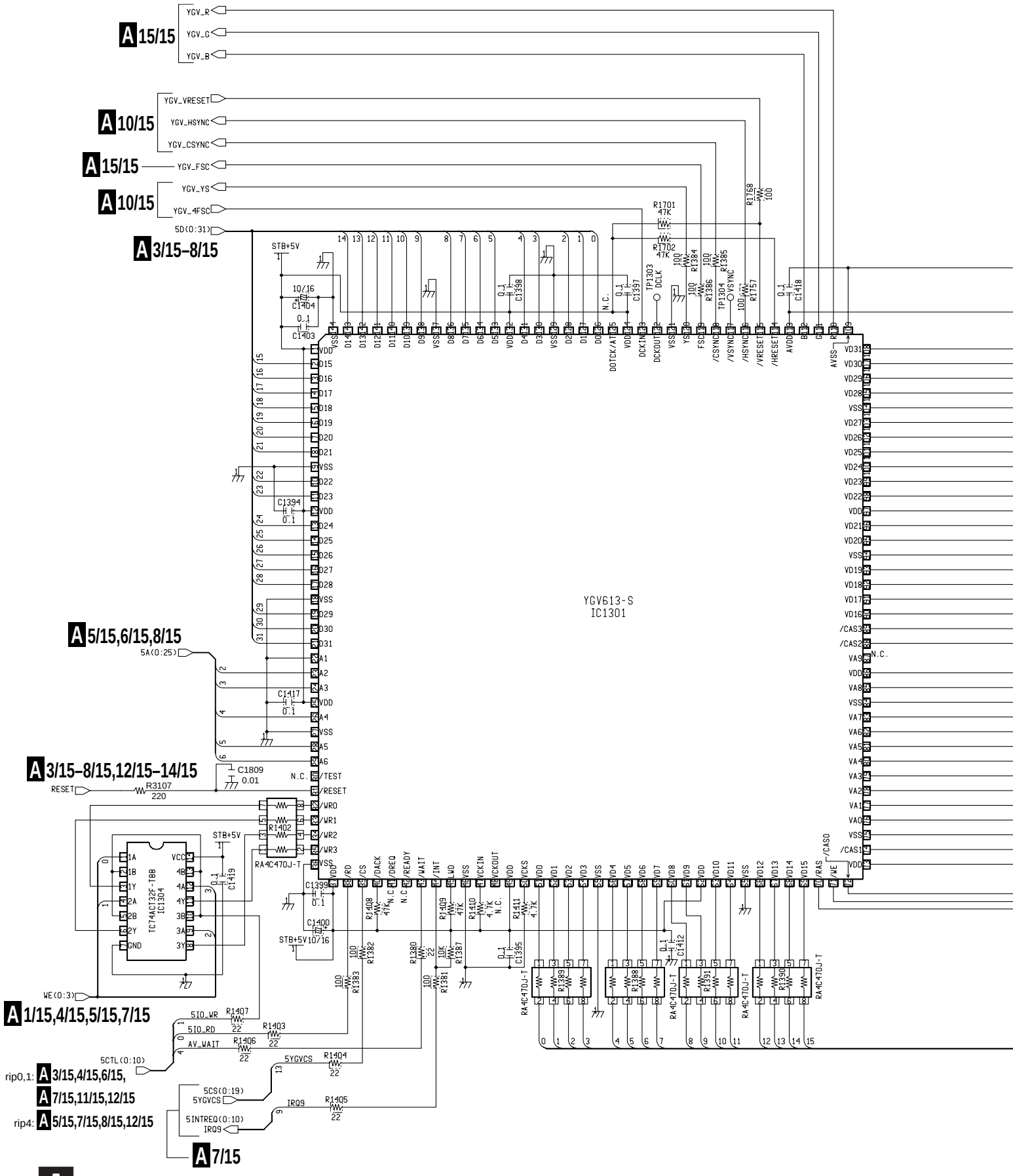

GATE ARRAY BLOCK
EXCEPT MLW/HK (S/N No. 1 - 100)
A 12/15
A 8/15
A 12/15
A 12/15
A 5/15
A 12/15
A 3/15,4/15,6/15,9/15,11/15,12/15
A 5/15,8/15,9/15,12/15
A 5/15
A 1/15,4/15,5/15,9/15
A 1/15,12/15
A 1/15
A 3/15–6/15,8/15,9/15,12/15–14/15
rip0,6,10: A 12/15
rip1,3,4,5: A 11/15
rip2,11: A 8/15
rip7: A 3/15
rip8,14–18: A 6/15
rip9: A 6/15,11/15
rip12: A 4/15
rip13: A 9/15
rip19: A 6/15,12/15
IC1029
PD6274A

3.9 MAIN ASSY (8/15)

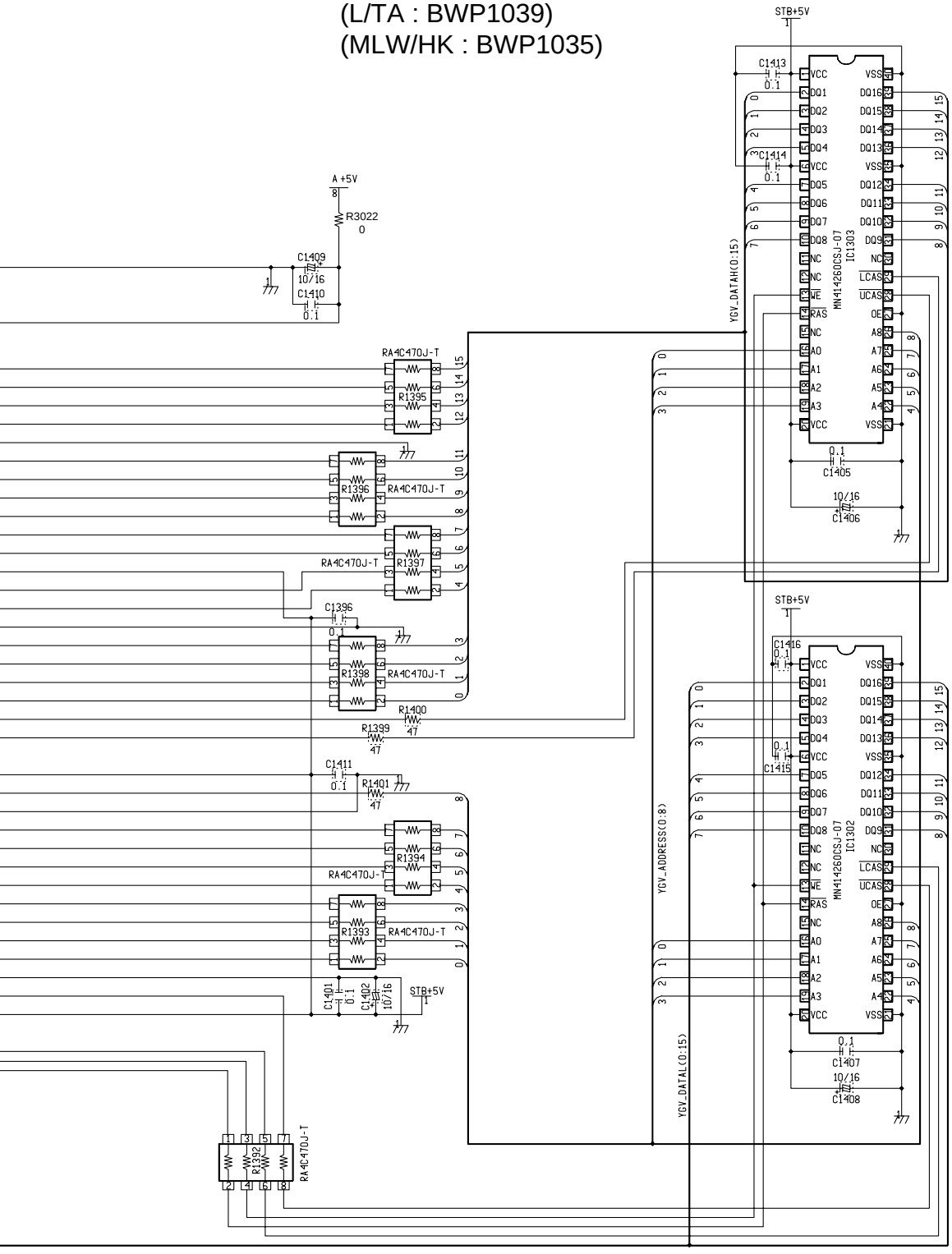



A 8/15 MAIN ASSY(8/15)
(L/TA : BWP1039)
(MLW/HK : BWP1035)
SIGNAL ROUTE
(M) : MIDI SOUND SIGNAL
rip0,1: A 12/15
rip2: A 13/15
A 1/15,2/15,5/15,
A 11/15,12/15
A 14/15
A 13/15
A 13/15
A_DATA(0:6)
D(0:31)
AUDIOIN(R)
AUDIOIN(L)
KOUKAON
IC1458 TC74ACT573F
H'B4000F00
RA4C470J-T
A_SW1
A_SW2
DSP
MPEGSW
GUIDE
CCV
IC1459 TC4053BF-TBB
TP1101
TP1102
EFFECT,GUIDE,MIDI,MPEG
OTO(0:7)
IC1460 NJM4558MD-TLB
EFFECT(L)
EFFECT(R)
2Vp-p
ASW(0:8)
BCLK
LRCLK
PCMDATA
SERIN2
IC1455 UPD63200GS
DAC(GUIDE)
IC1461 NJM4558MD-TLB
GUIDE(R)
GUIDE(L)
0.37Vp-p
IC1456 PCM69AU-TBB
DAC(MUSIC)
IC1457 NJM0720M-E-TF
MIDI(L)
MIDI(R)
0.37Vp-p
DAC(MPEG)
IC1454
AK4319-VM
IC1462 NJM4558MD-TLB
MPEG(L)
MPEG(R)
0.5Vp-p
STB+5V
STB+12V
STB-12V
A+5V

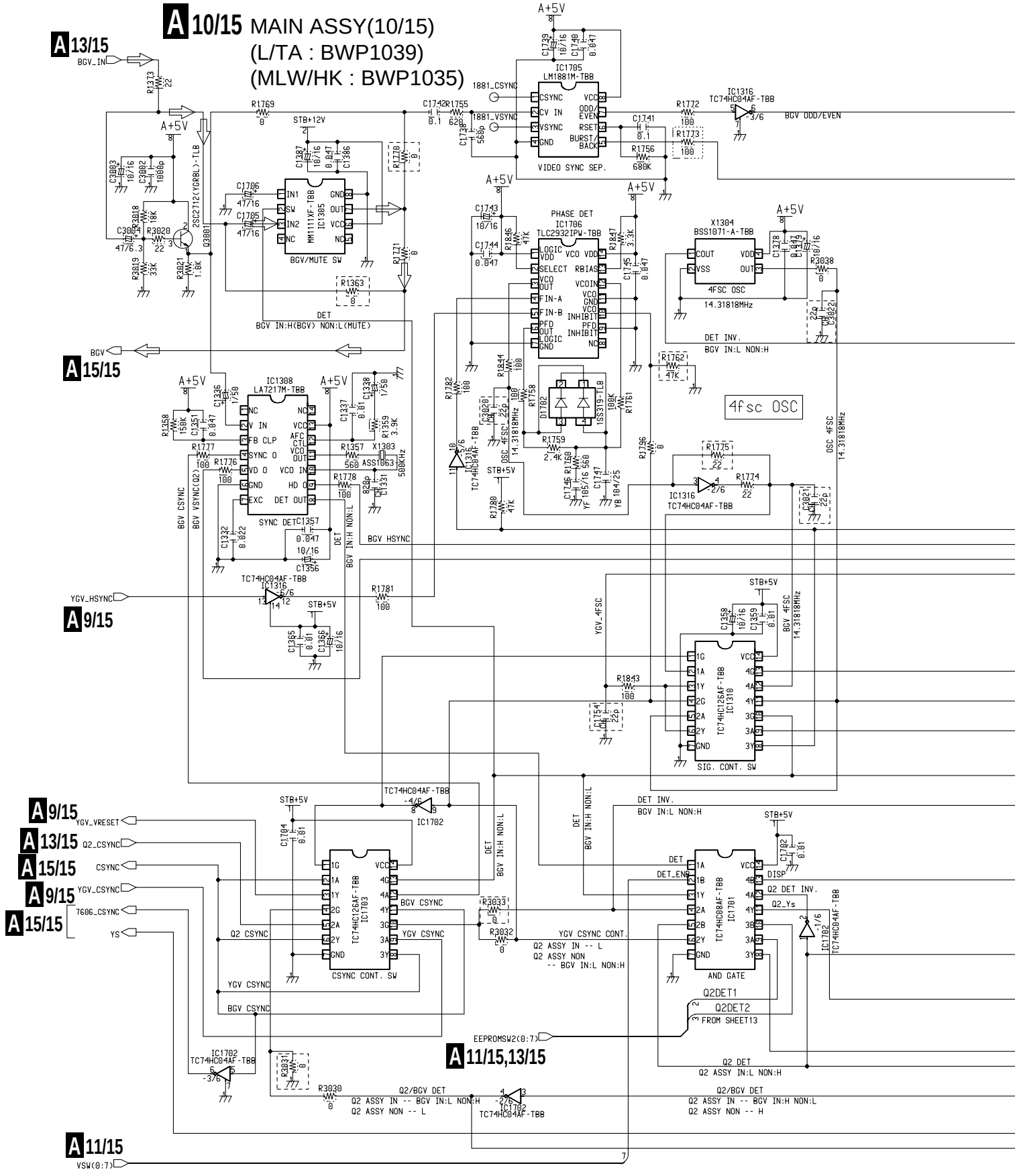
3.10 MAIN ASSY (9/15)



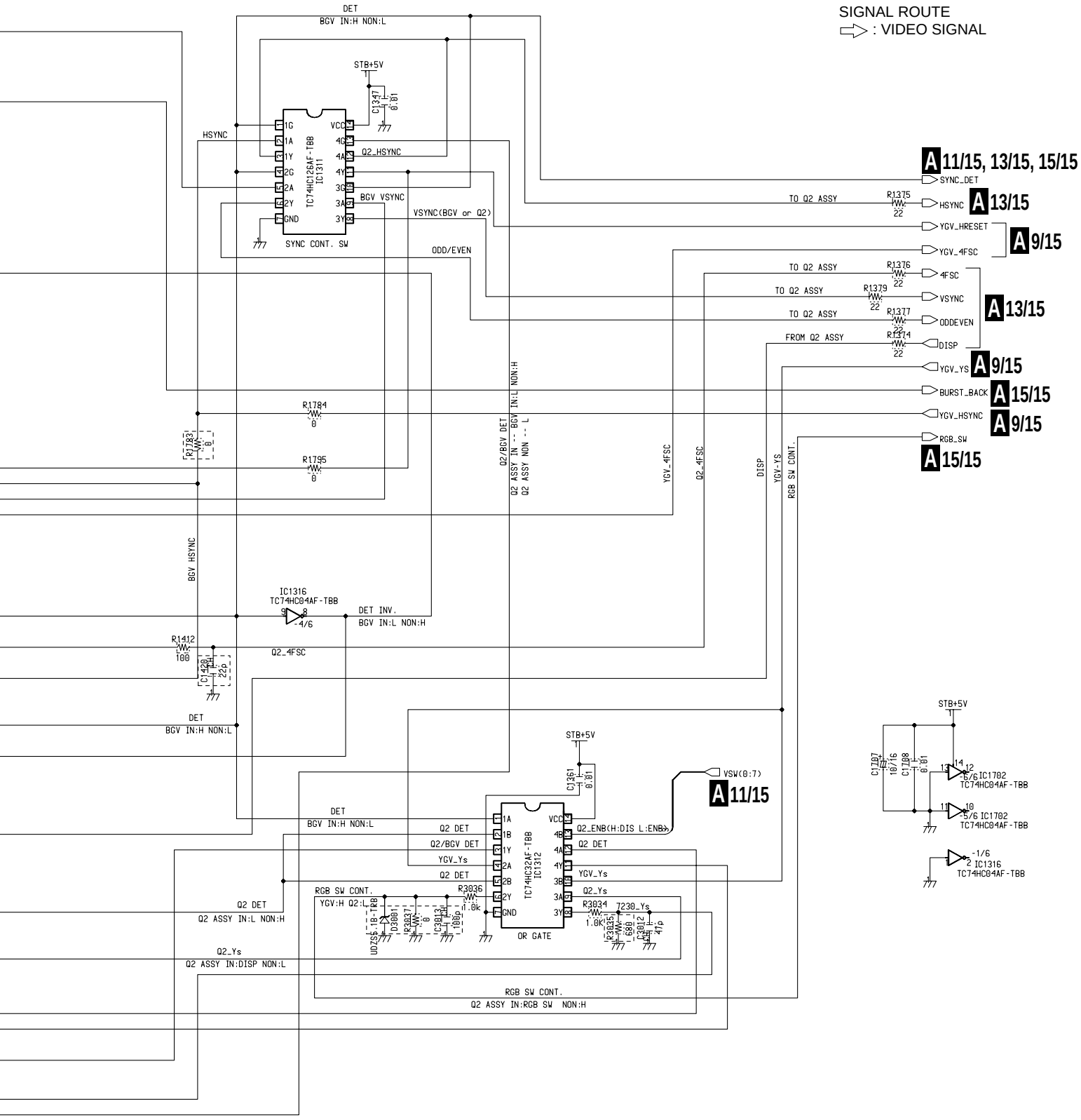
A 9/15 MAIN ASSY(9/15)
(L/TA : BWP1039)
(MLW/HK : BWP1035)



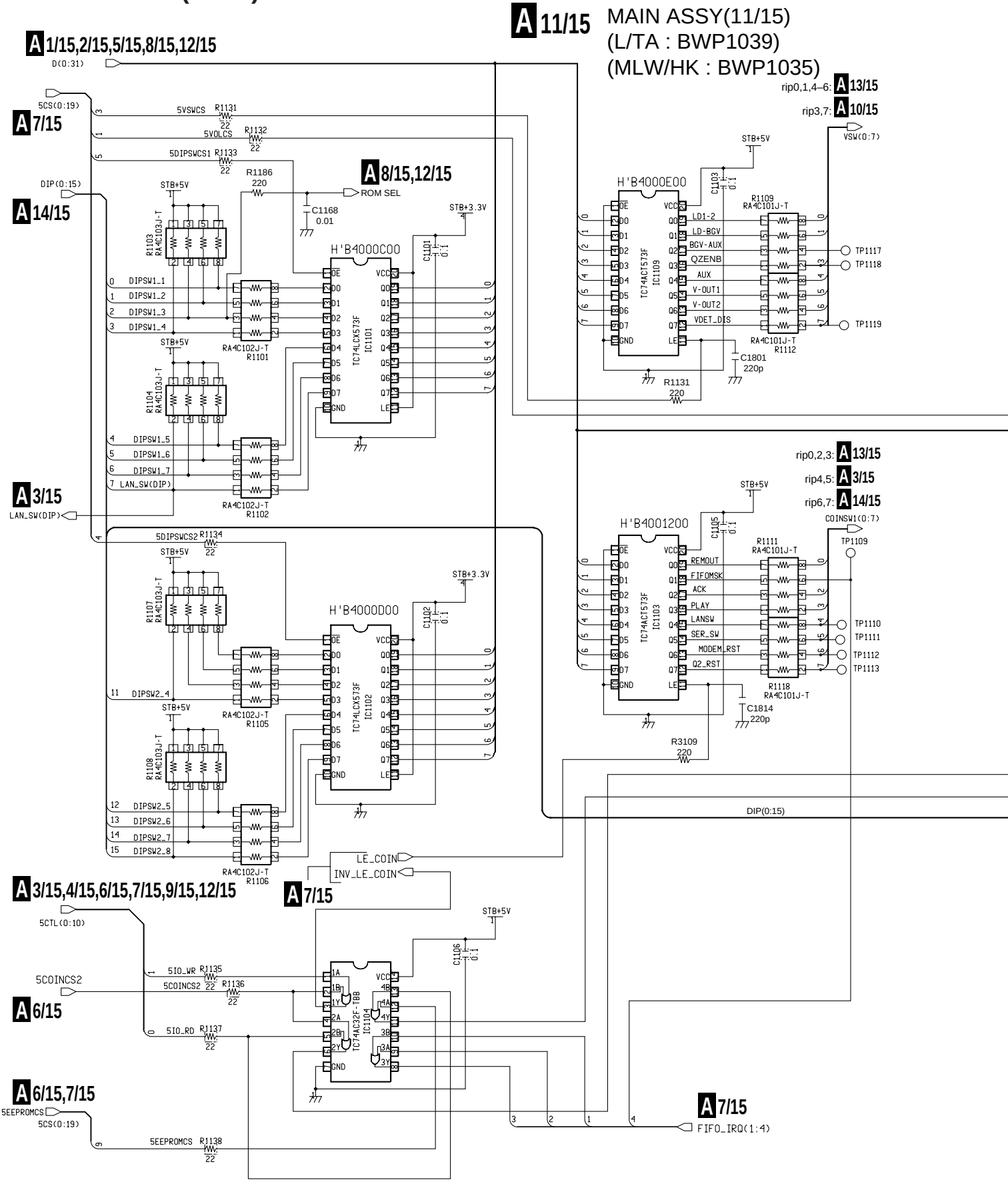
3.11 MAIN ASSY (10/15)

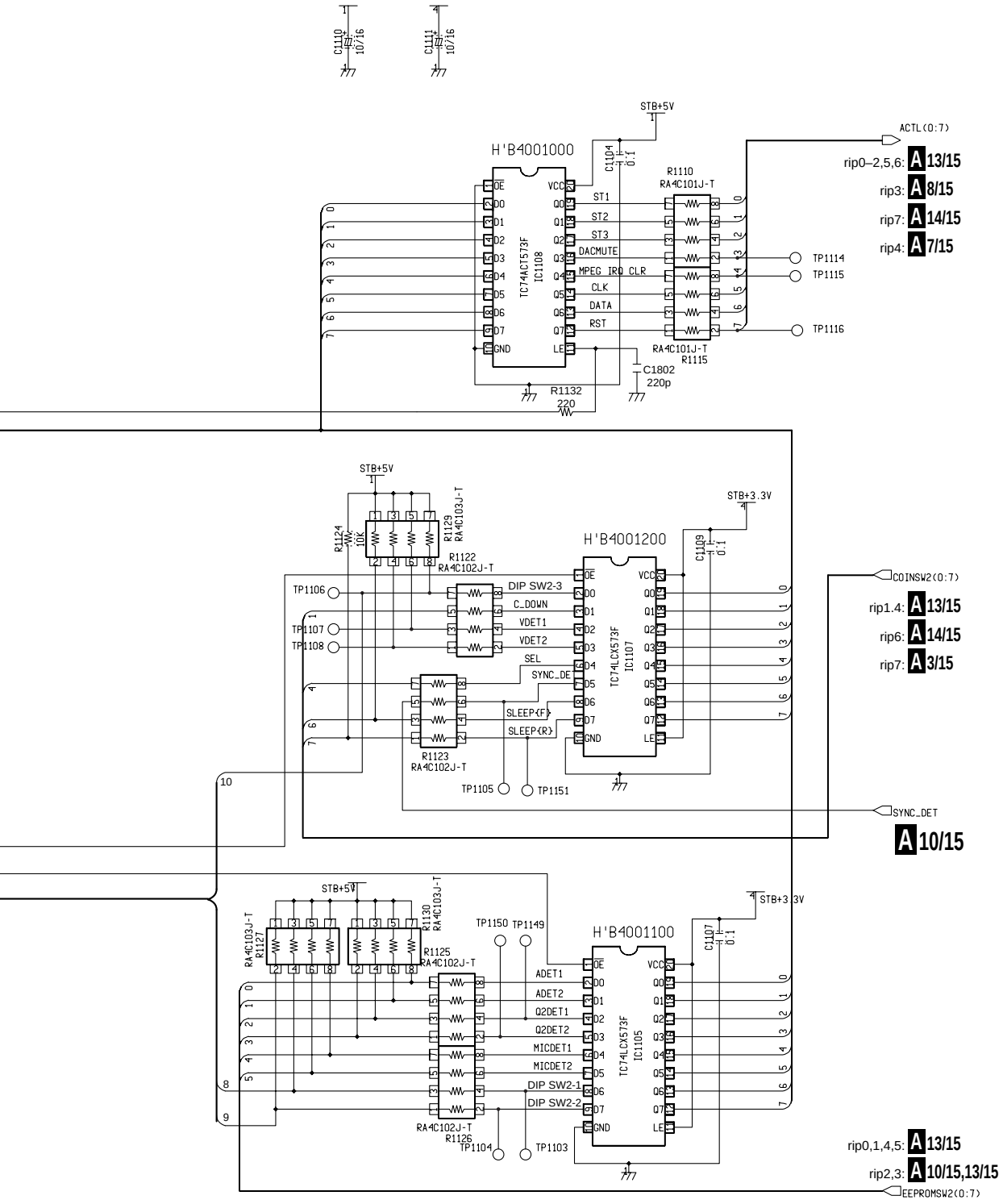


SIGNAL ROUTE
⇨ : VIDEO SIGNAL

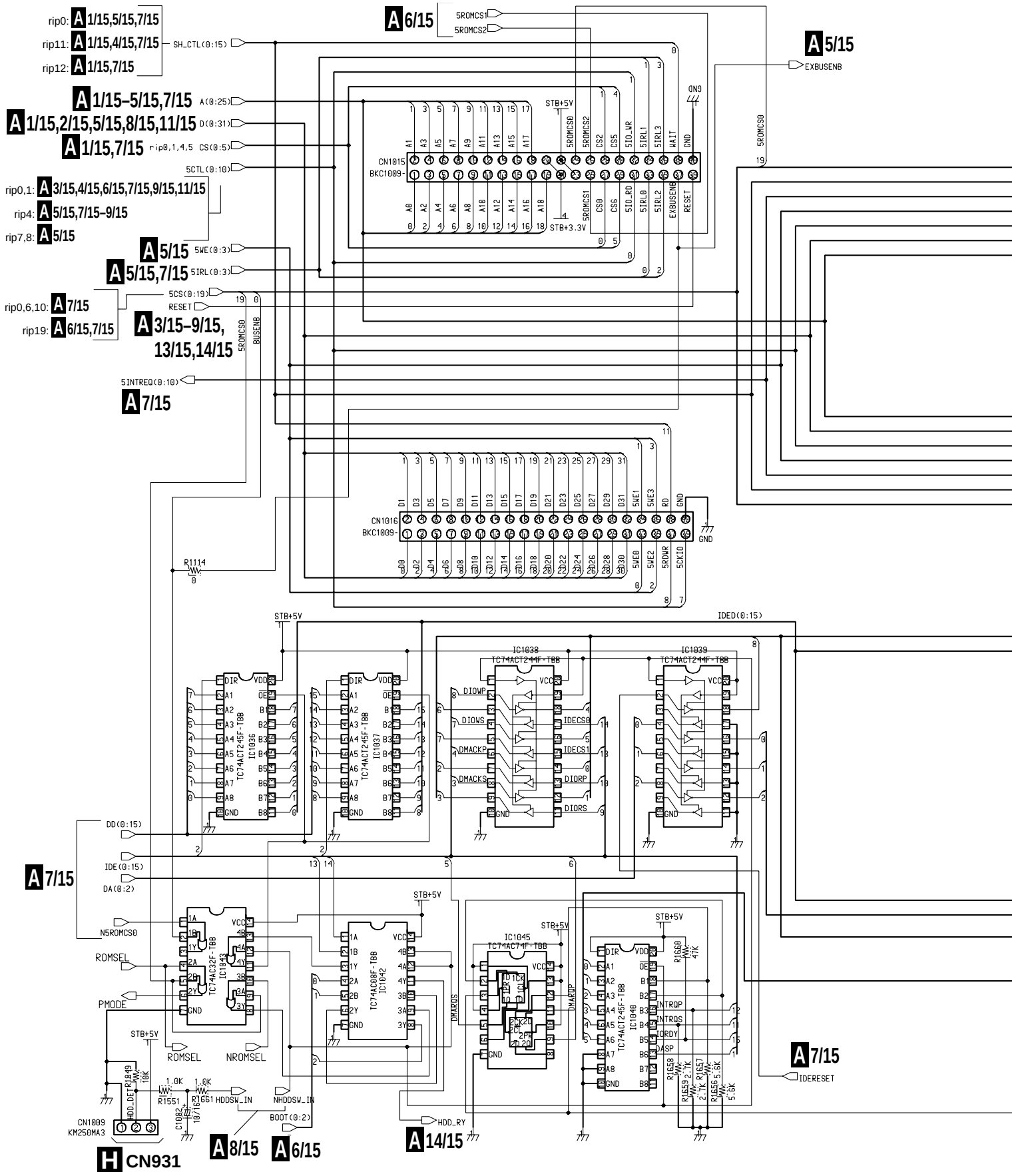


3.12 MAIN ASSY (11/15)

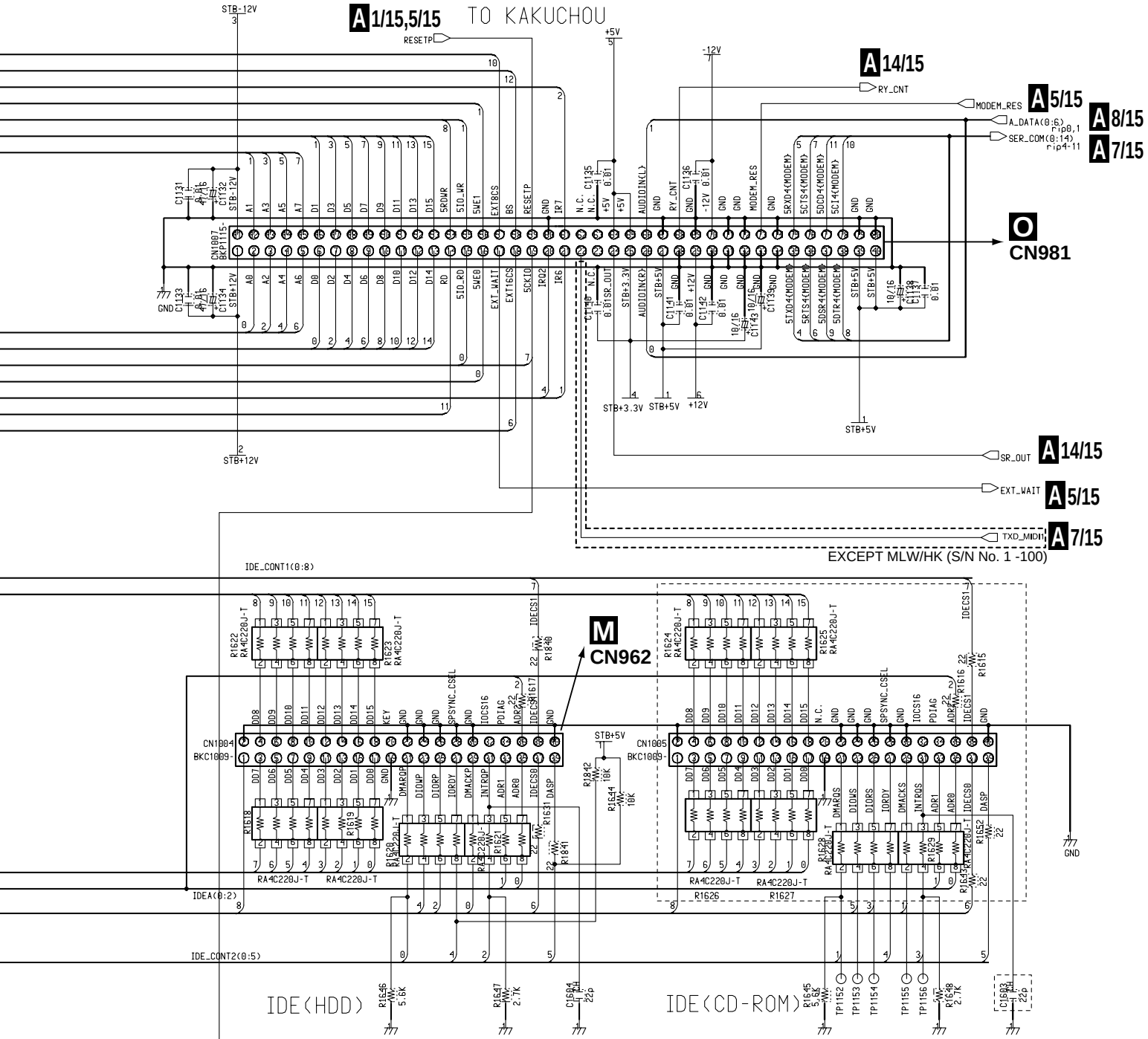



H'B4001000
IC1108
TC74AC573F
STB+5V
ACTL(0:7)
ST1
ST2
ST3
DACMUTE
MPEG IRQ CLR
CLK
DATA
RST
R1110
RA4C101J-T
R1115
C1104
C1802
220p
R1132
220
TP1114
TP1115
TP1116
rip0–2,5,6: A13/15
rip3: A8/15
rip7: A14/15
rip4: A7/15
H'B4001200
IC1107
TC74LCX573F
STB+3.3V
R1122
RA4C102J-T
R1123
RA4C102J-T
R1124
R1129
RA4C103J-T
DIP SW2-3
C_DOWN
VDET1
VDET2
SEL
SYNC_DE
SLEEP(F)
SLEEP(R)
TP1105
TP1151
COINSW2(0:7)
rip1.4: A13/15
rip6: A14/15
rip7: A3/15
SYNC_DET
A10/15
H'B4001100
IC1105
TC74LCX573F
R1125
RA4C102J-T
R1126
RA4C102J-T
R1127
R1130
RA4C103J-T
ADET1
ADET2
Q2DET1
Q2DET2
MICDET1
MICDET2
DIP SW2-1
DIP SW2-2
TP1104
TP1103
TP1150
TP1149
rip0,1,4,5: A13/15
rip2,3: A10/15,13/15
EEPROMSW2(0:7)

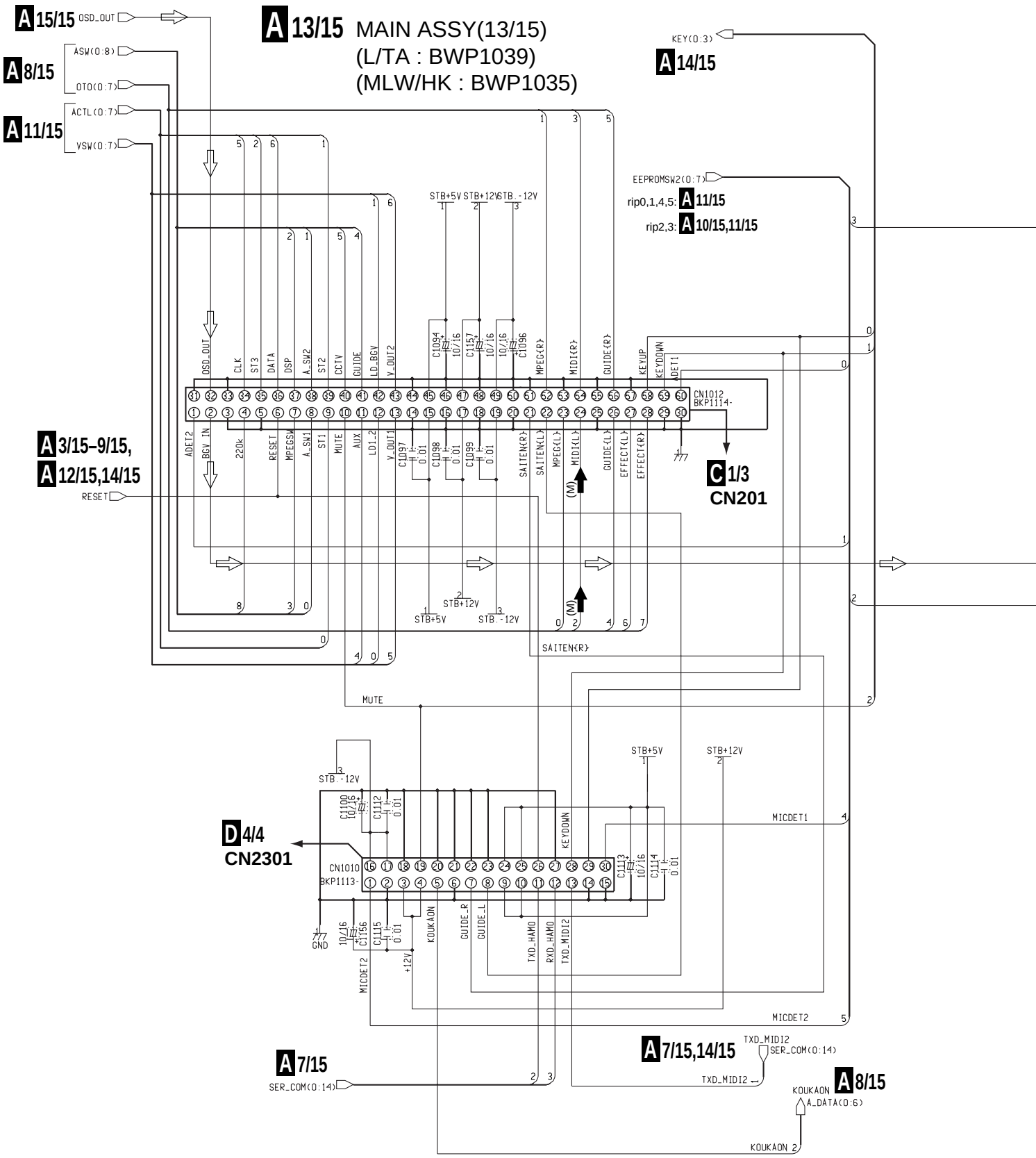
3.13 MAIN ASSY (12/15)



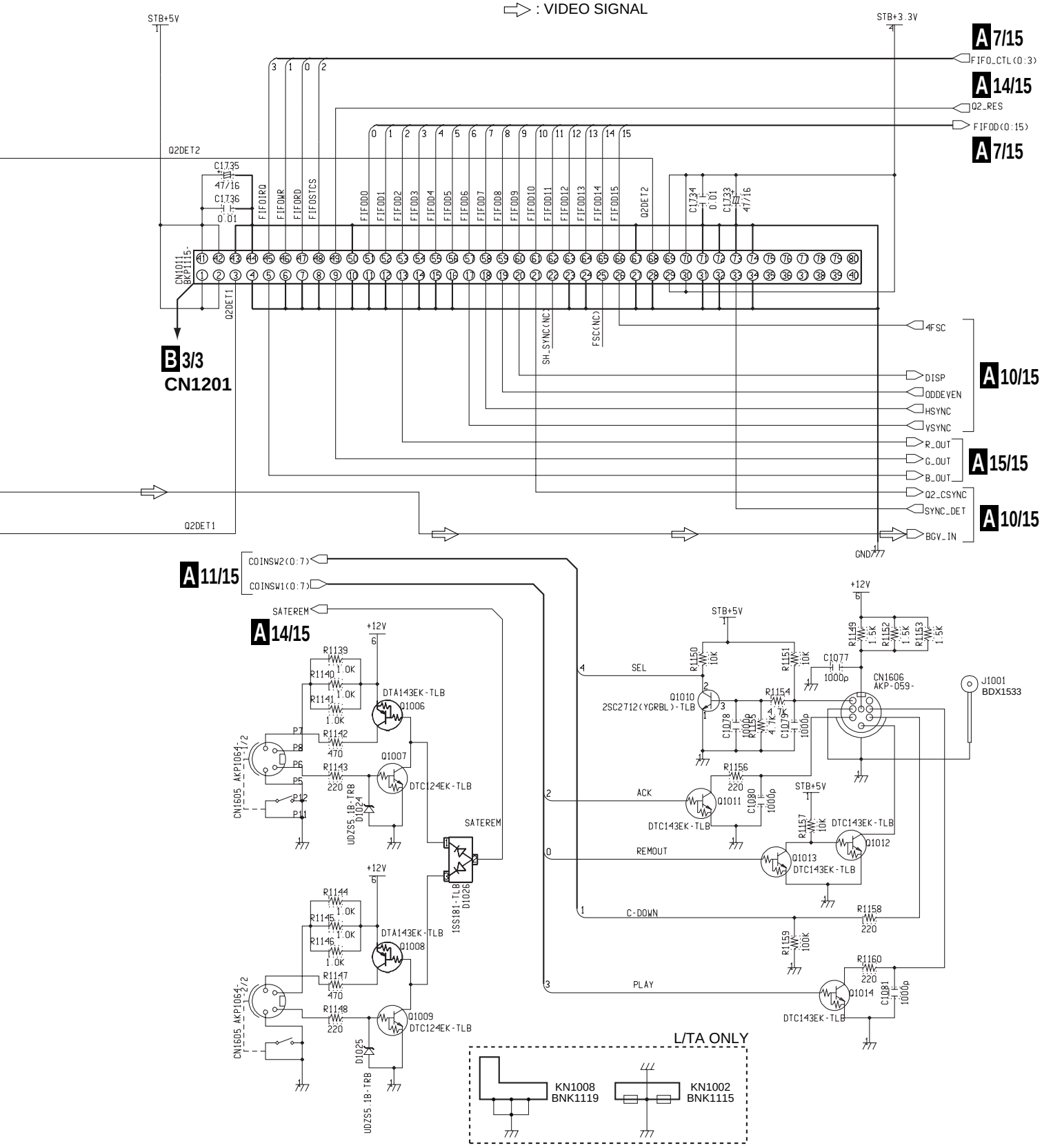
A 12/15 MAIN ASSY(12/15)
(L/TA : BWP1039)
(MLW/HK : BWP1035)



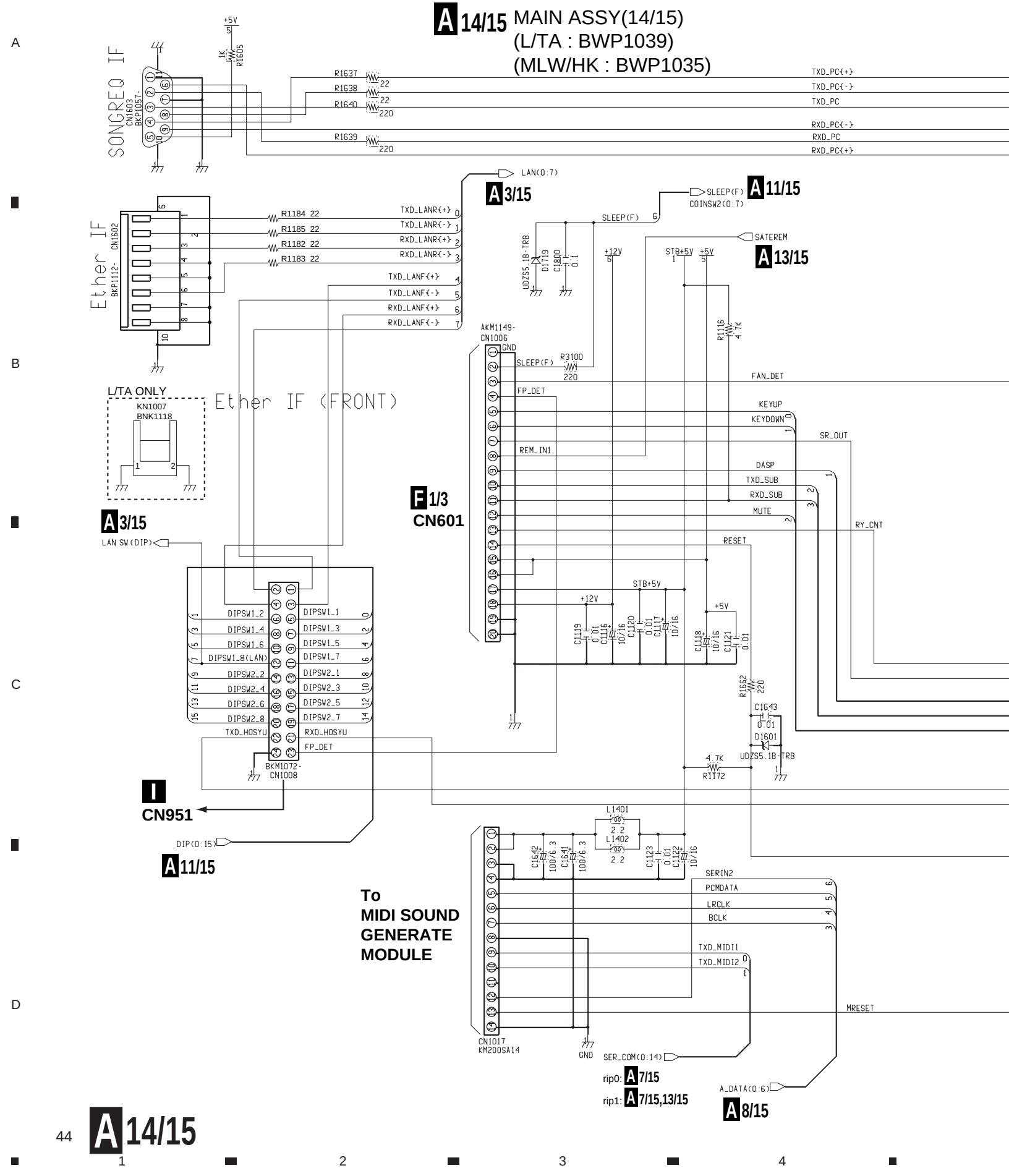
3.14 MAIN ASSY (13/15)

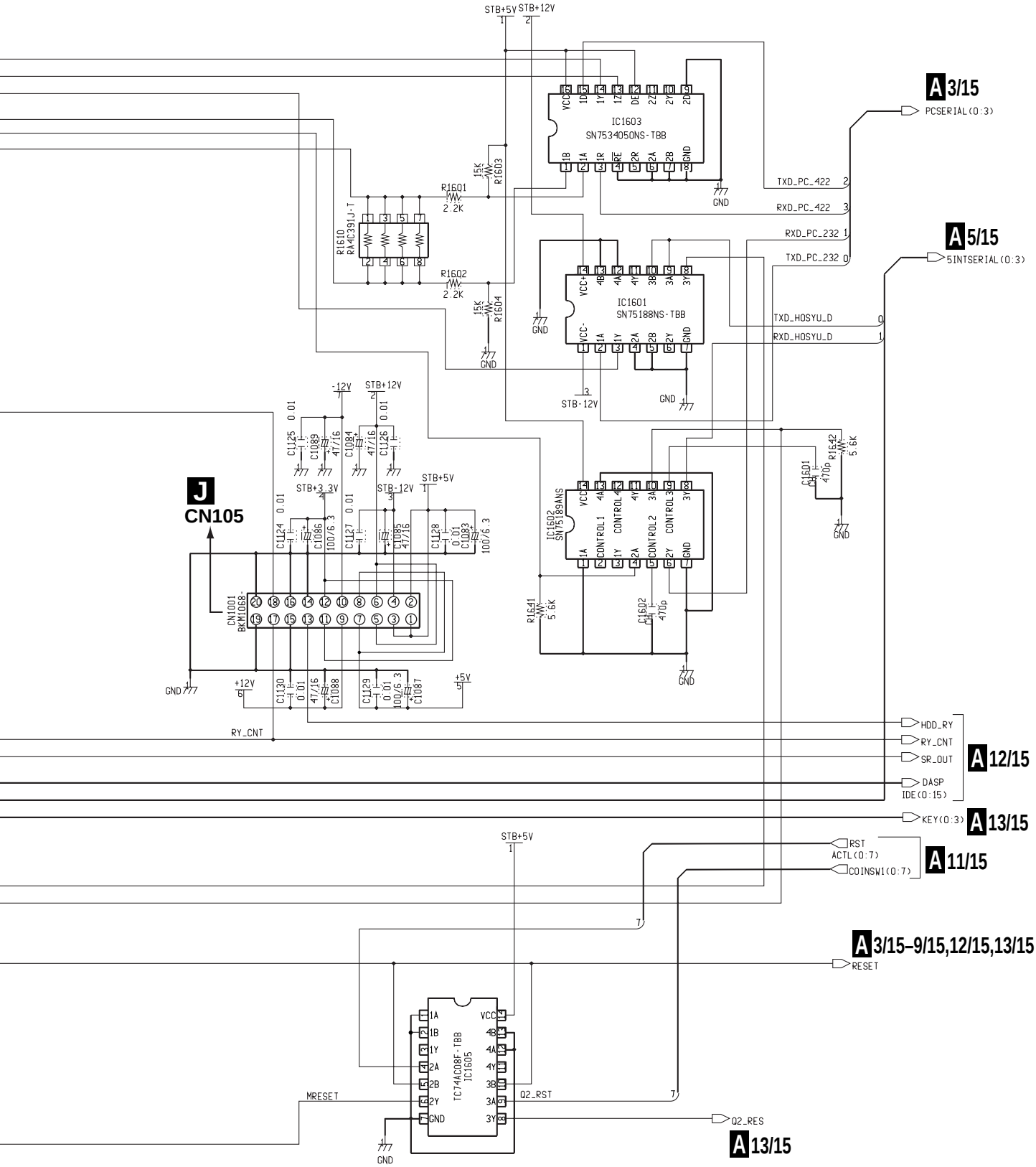


SIGNAL ROUTE
(M) : MIDI SOUND SIGNAL
: VIDEO SIGNAL

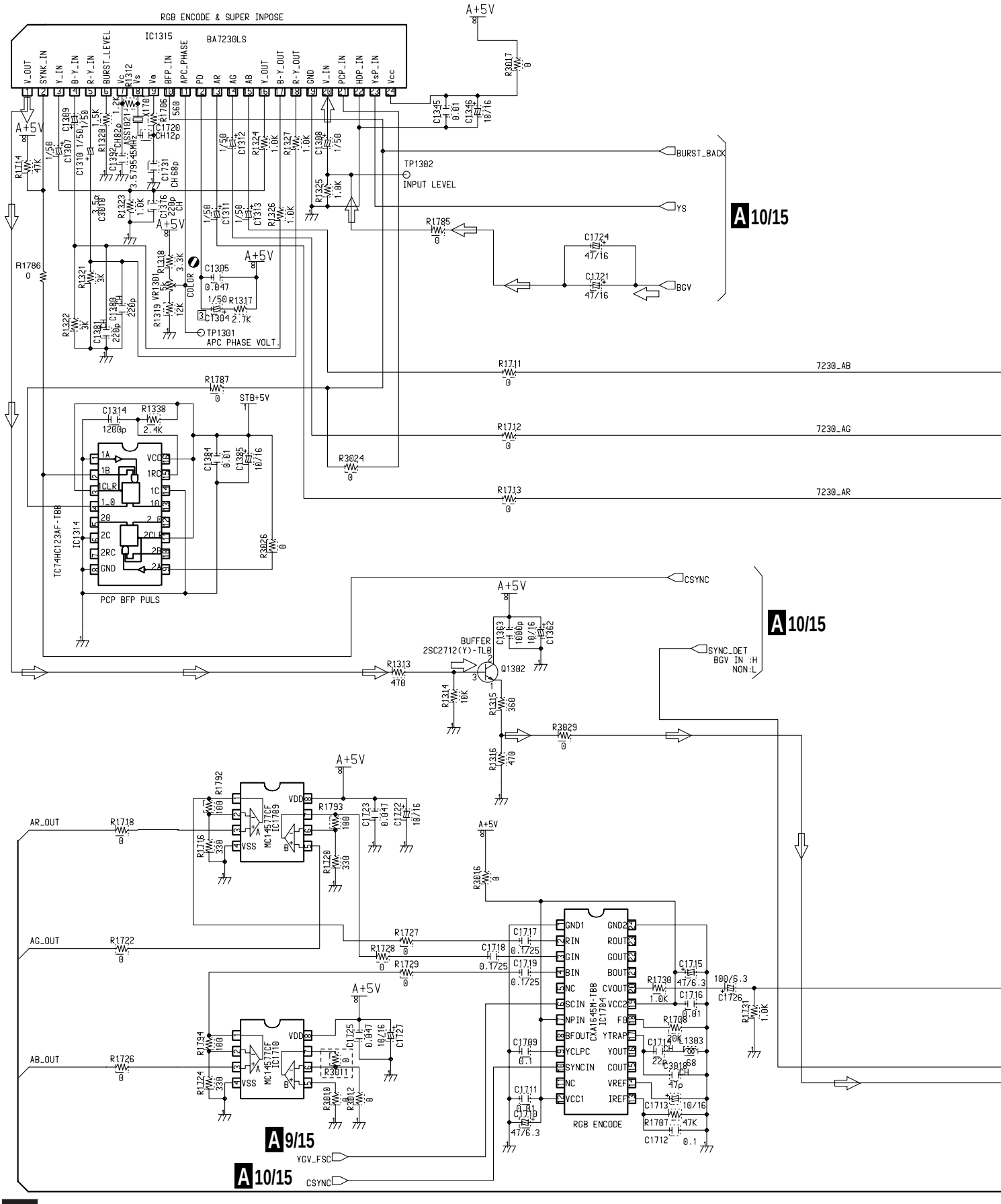


3.15 MAIN ASSY (14/15)



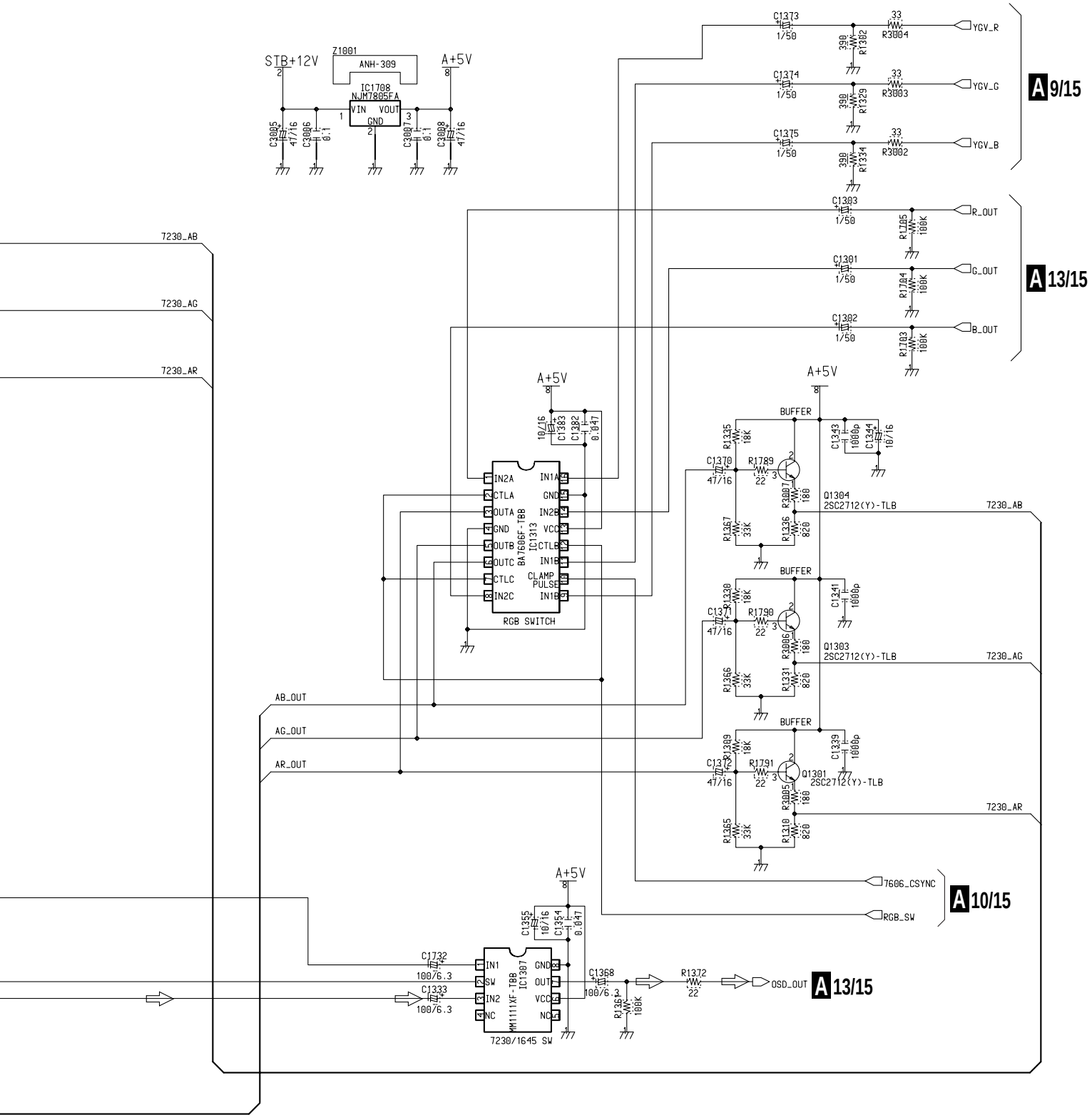

STB+5V
STB+12V
IC1603
SN7534050NS-TBB
R1601
2.2K
R1602
2.2K
R1603
15K
R1604
15K
R1610
RA4C391J-T
IC1601
SN75188NS-TBB
STB-12V
-12V
C1125 0.01
C1089 47/16
C1084 47/16
C1126 0.01
STB+3.3V
C1124 0.01
C1086 100/6.3
C1127 0.01
C1085 47/16
C1128 0.01
C1083 100/6.3
J
CN105
CN1001
BKM1068
C1130 0.01
C1088 47/16
C1129 0.01
C1087 100/6.3
+12V
+5V
GND
RY_CNT
IC1602
SN75189ANS
R1641 5.6K
R1642 5.6K
C1601 470p
C1602 470p
TXD_PC_422
RXD_PC_422
RXD_PC_232
TXD_PC_232
TXD_HOSYU_D
RXD_HOSYU_D
A 3/15
PCSERIAL(0:3)
A 5/15
SINTSERIAL(0:3)
HDD_RY
RY_CNT
SR_OUT
DASP
IDE(0:15)
A 12/15
KEY(0:3)
A 13/15
RST
ACTL(0:7)
COINSW1(0:7)
A 11/15
A 3/15–9/15,12/15,13/15
RESET
IC1605
TC74AC08F-TBB
MRESET
Q2_RST
Q2_RES
A 13/15

3.16 MAIN ASSY (15/15)



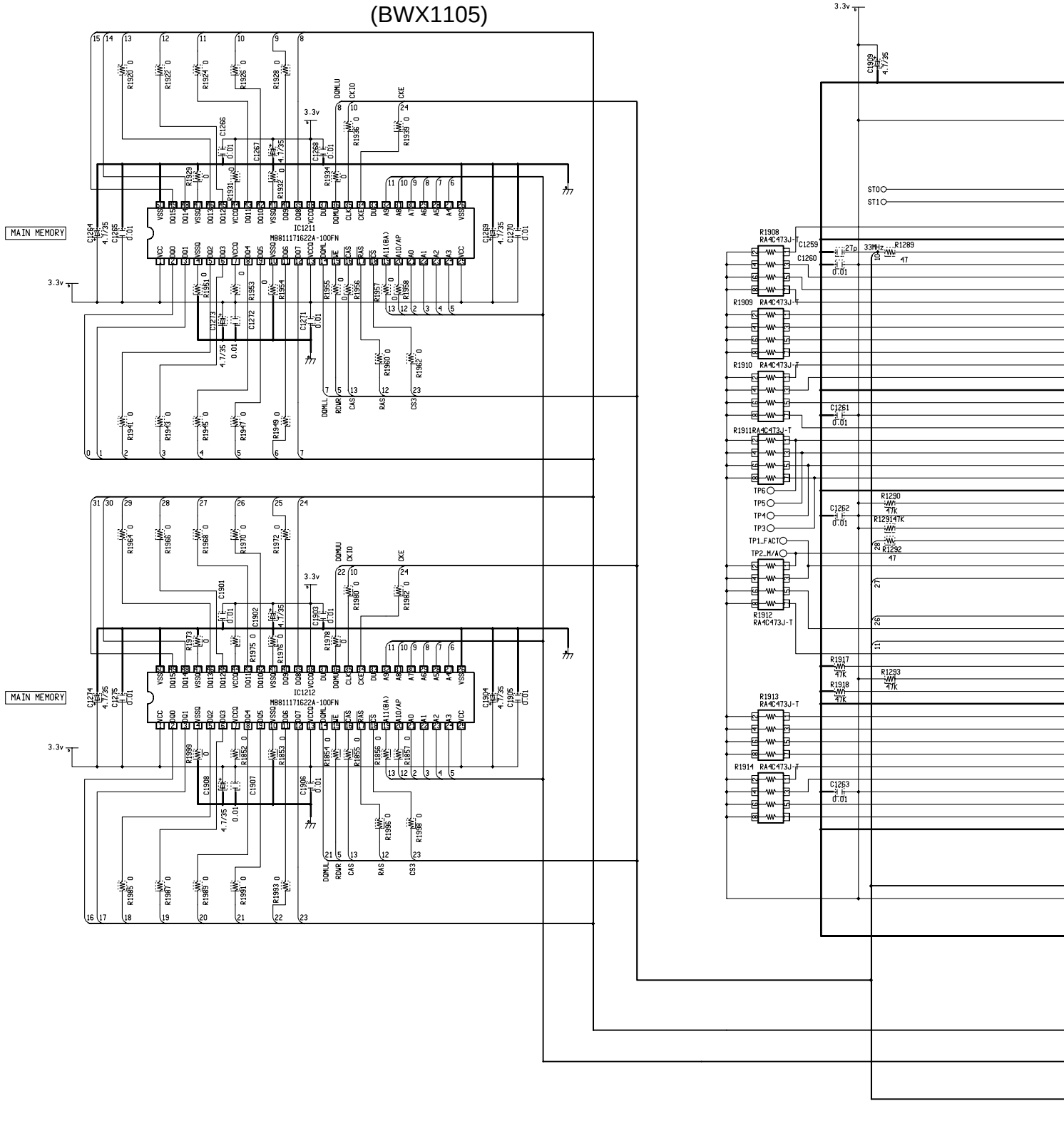
A 15/15 MAIN ASSY(15/15)
(L/TA : BWP1039)
(MLW/HK : BWP1035)

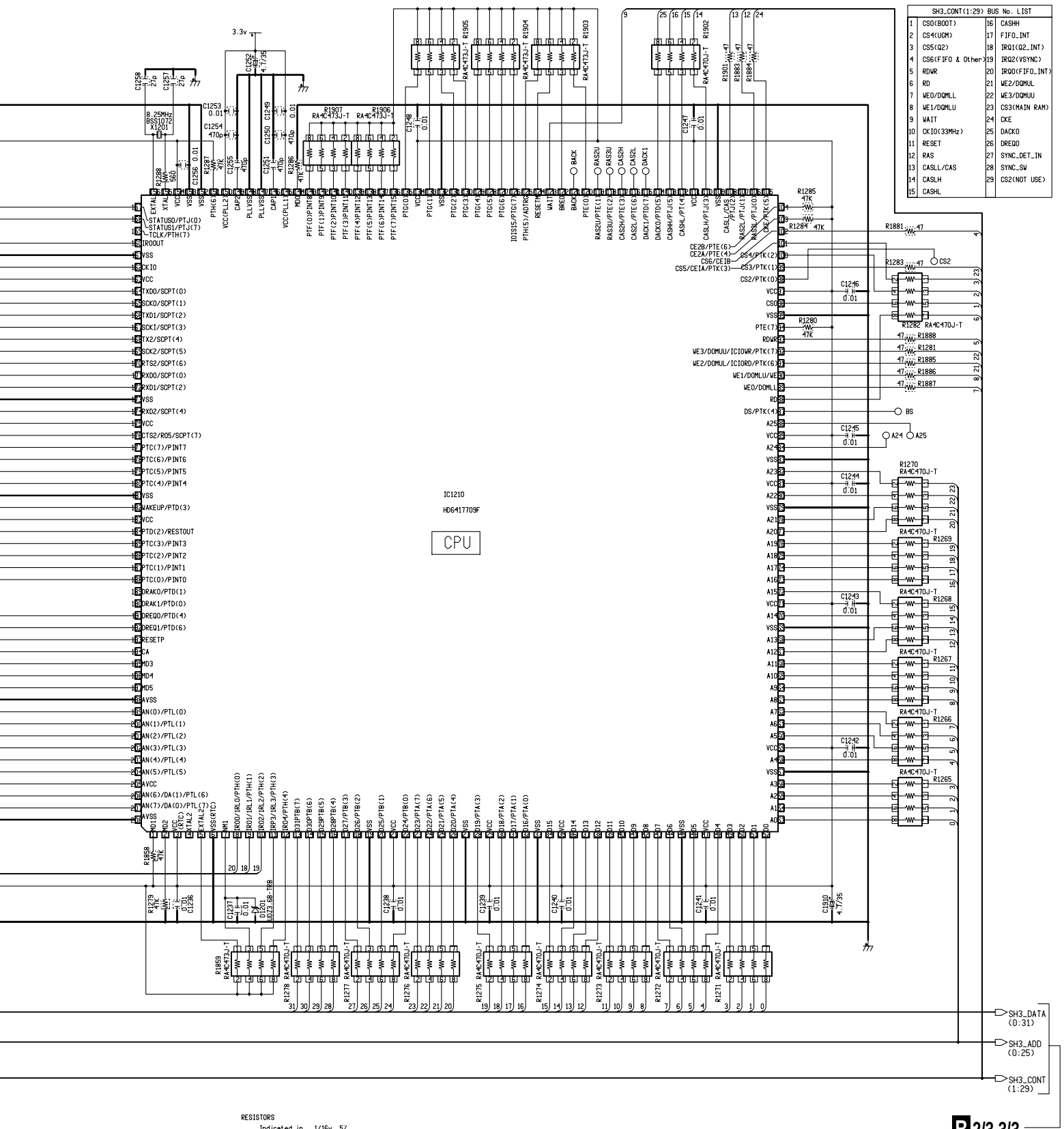
SIGNAL ROUTE
⇨ : VIDEO SIGNAL



3.17 3D ASSY (1/3)

B 1/3 3D ASSY(1/3)
(BWX1105)

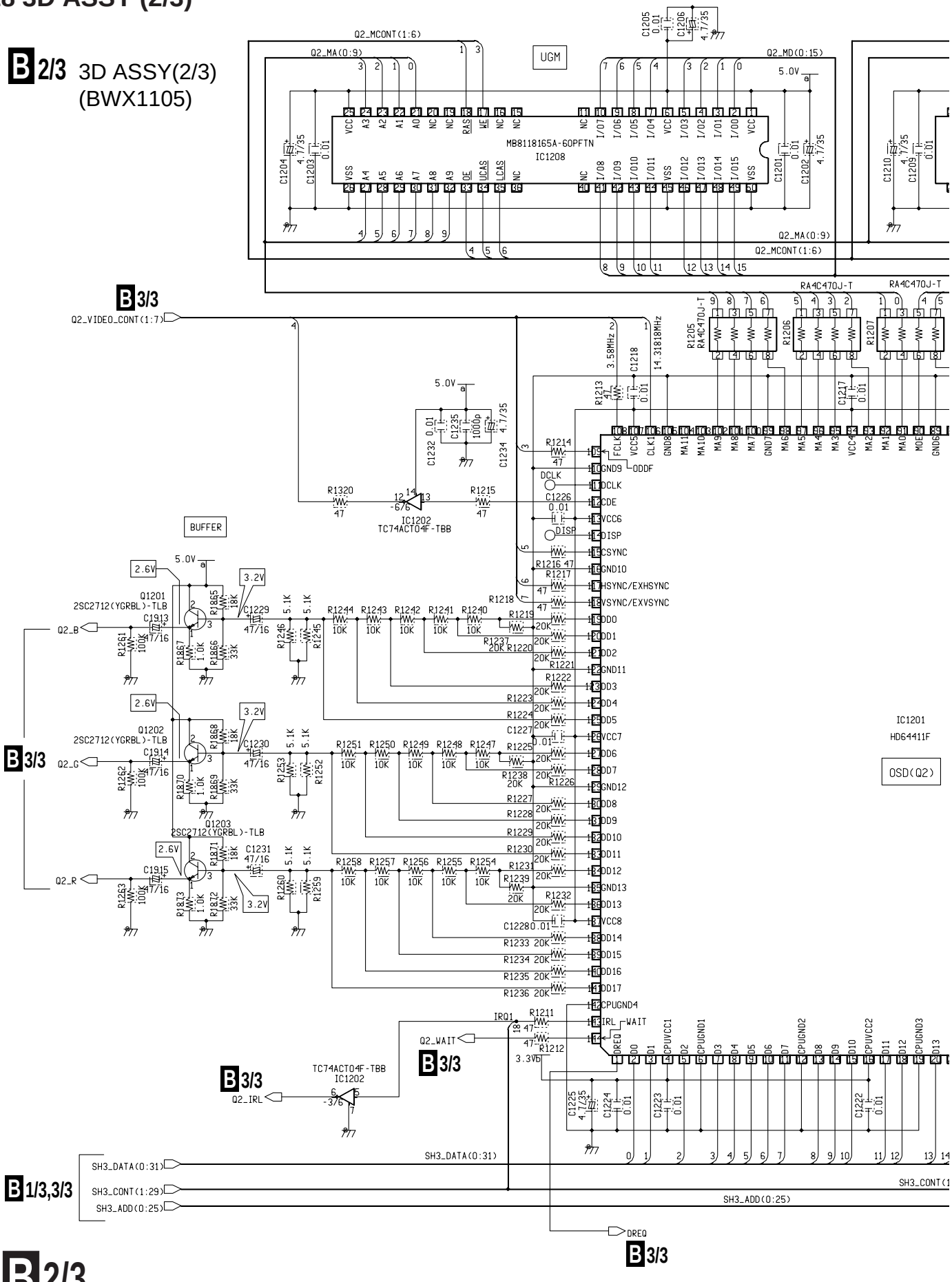


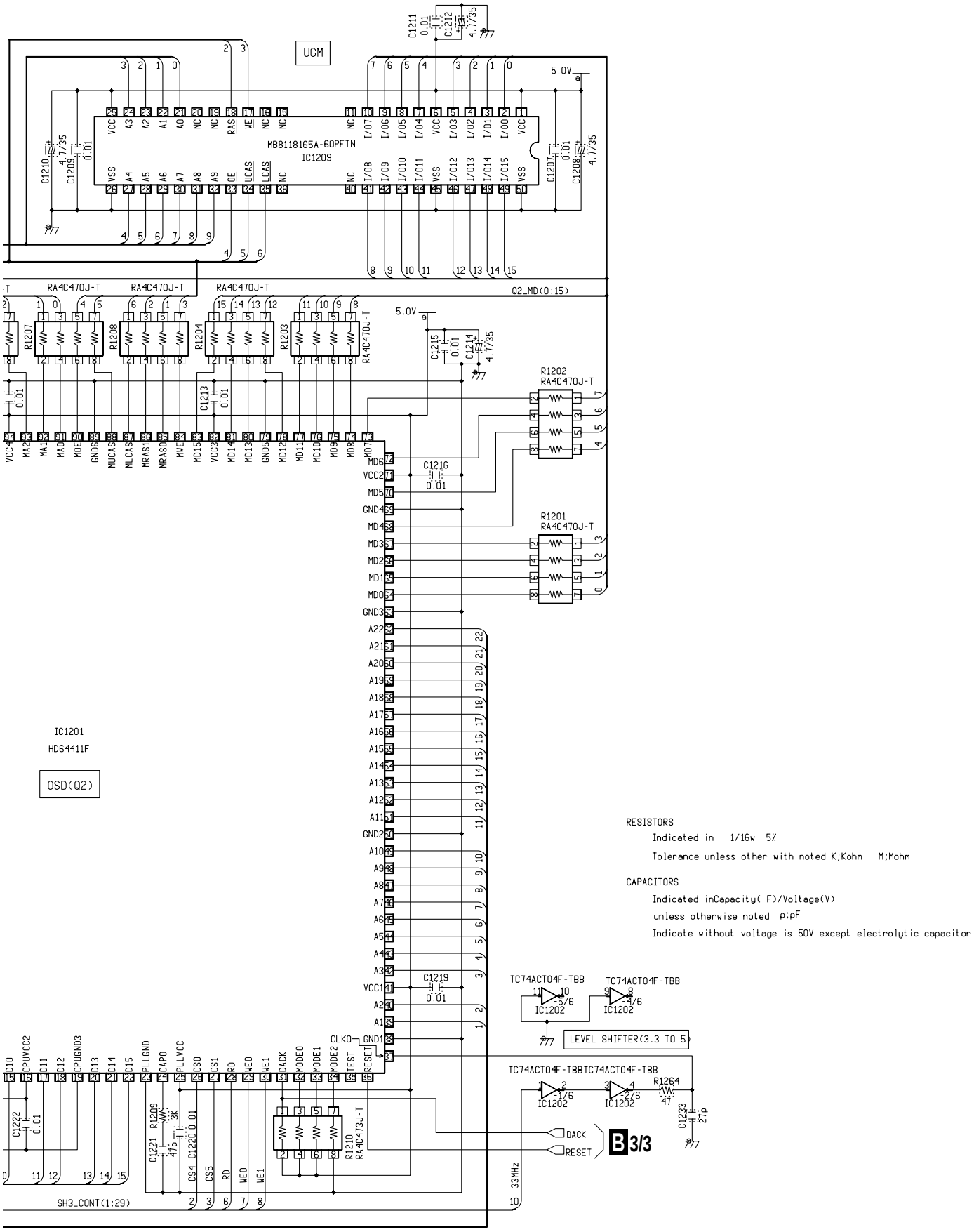


RESISTORS
Indicated in 1/16w 5%
Tolerance unless other with noted K:Kohm M:Mohm

CAPACITORS
Indicated inCapacity(F)/Voltage(V)
unless otherwise noted P:pF
Indicate without voltage is 50V except electrolytic capacitor

3.18 3D ASSY (2/3)





RESISTORS

Indicated in 1/16w 5%

Tolerance unless other with noted K;Kohm M;Mohm

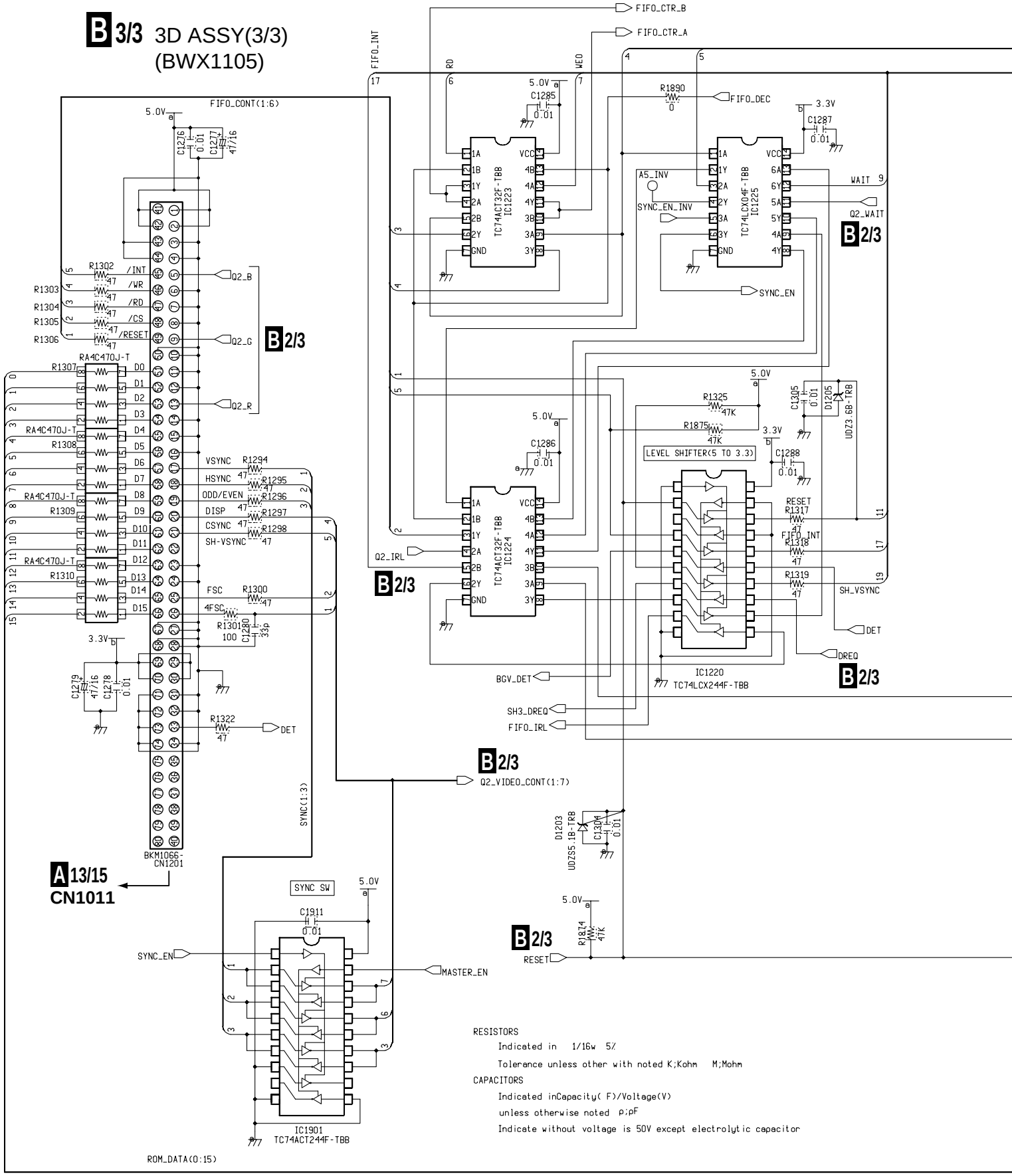
CAPACITORS

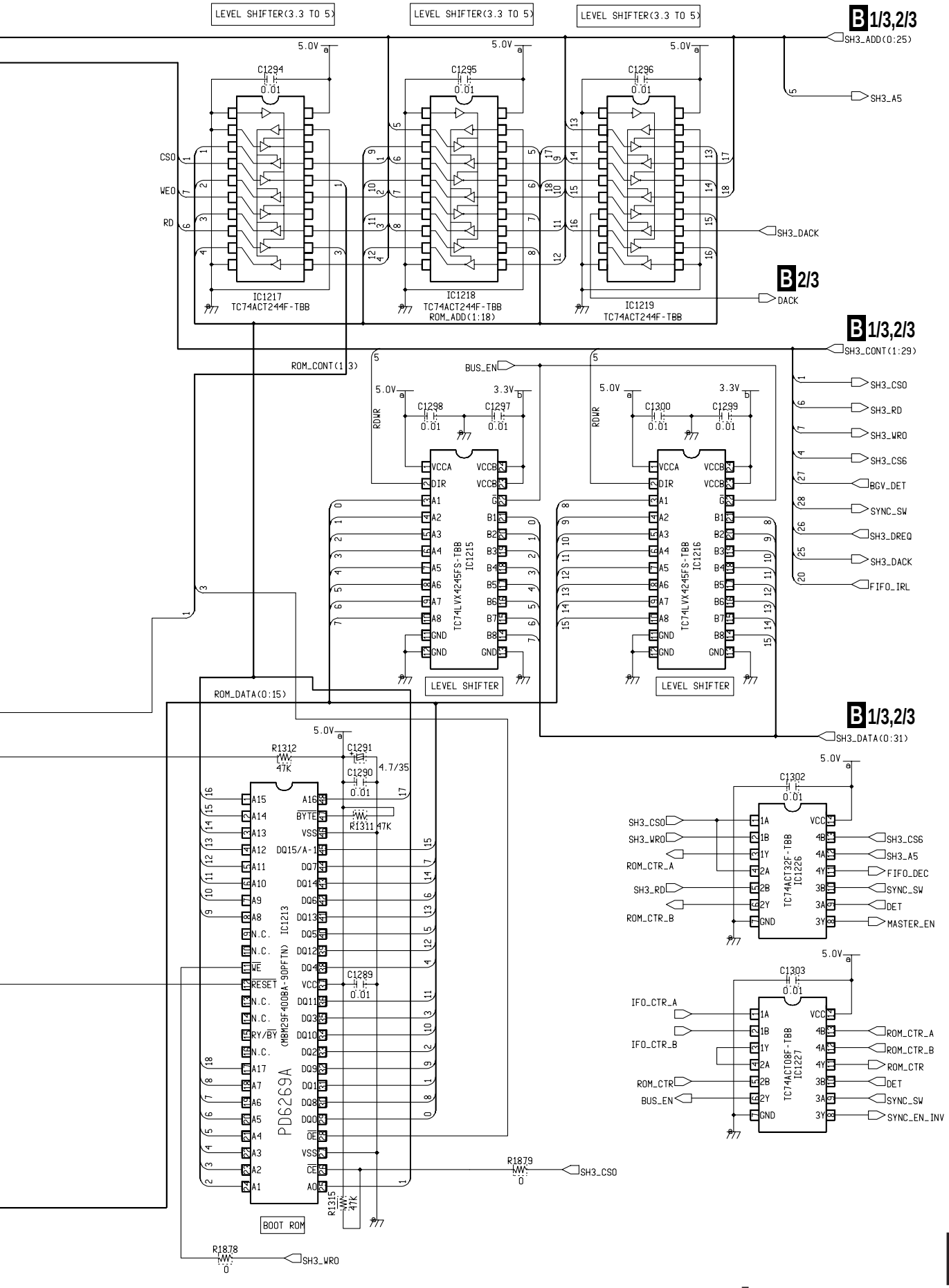
Indicated inCapacity(F)/Voltage(V)

unless otherwise noted P;pF

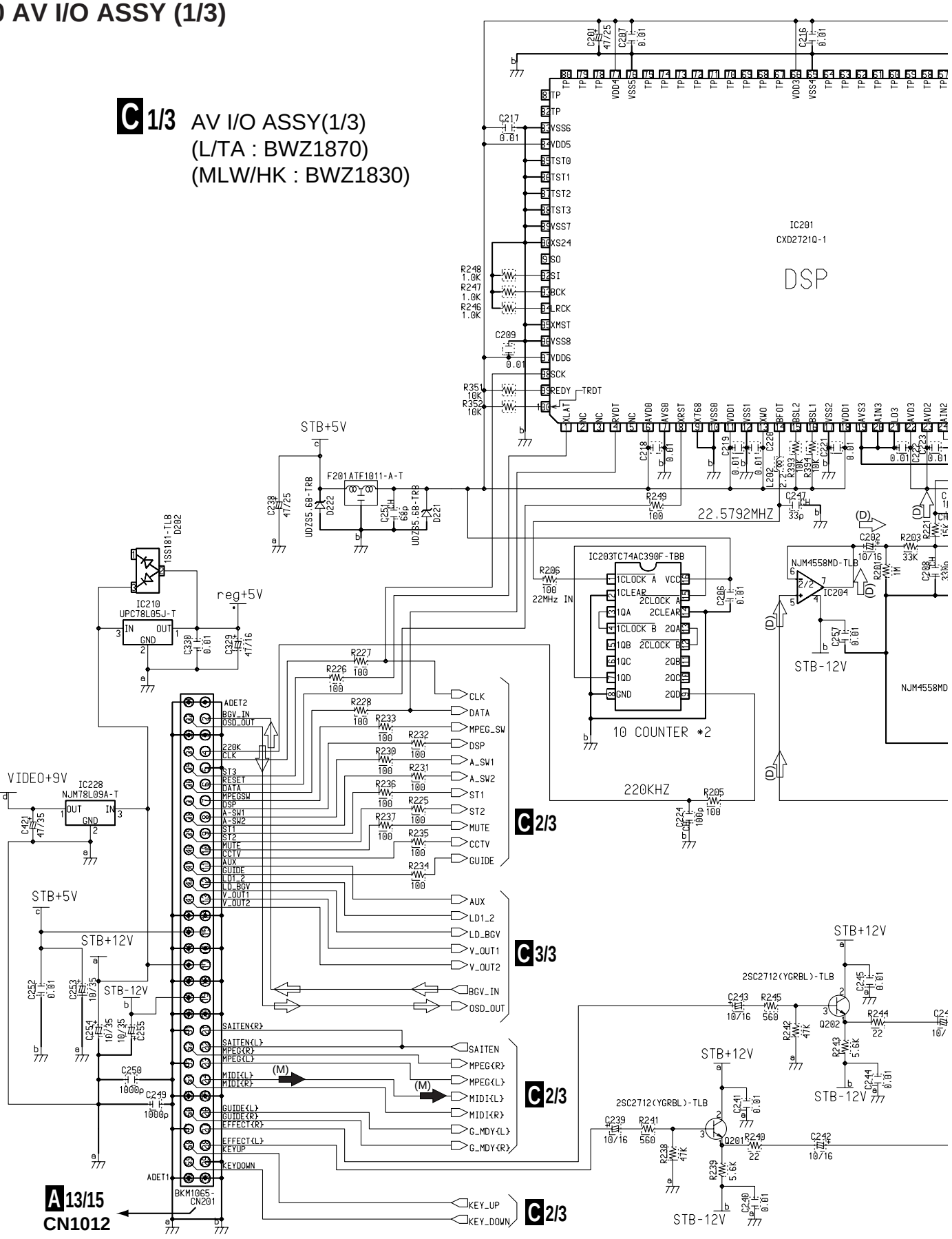
Indicate without voltage is 50V except electrolytic capacitor

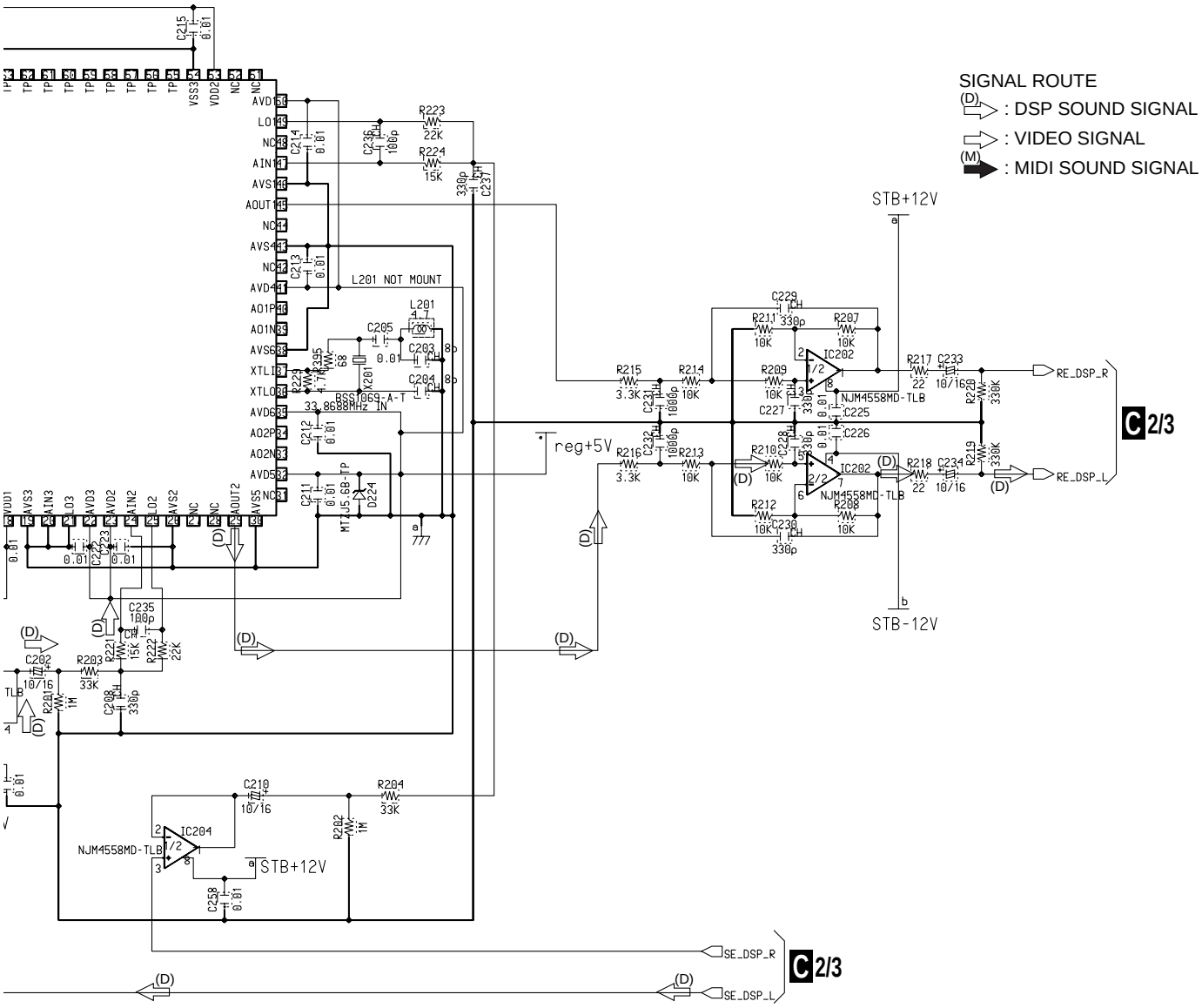
3.19 3D ASSY (3/3)




LEVEL SHIFTER(3.3 TO 5)
LEVEL SHIFTER(3.3 TO 5)
LEVEL SHIFTER(3.3 TO 5)
B 1/3,2/3
SH3_ADD(0:25)
SH3_A5
SH3_DACK
B 2/3
DACK
IC1217 TC74ACT244F-TBB
IC1218 TC74ACT244F-TBB
ROM_ADD(1:18)
IC1219 TC74ACT244F-TBB
CSO
WEO
RD
5.0V
C1294 0.01
C1295 0.01
C1296 0.01
B 1/3,2/3
SH3_CONT(1:29)
ROM_CONT(1:3)
BUS_EN
3.3V
RDWR
C1298 0.01
C1297 0.01
C1300 0.01
C1299 0.01
SH3_CSO
SH3_RD
SH3_WRO
SH3_CS6
BGV_DET
SYNC_SW
SH3_DREQ
SH3_DACK
FIFO_IRL
TC74LVX4245FS-TBB IC1215
TC74LVX4245FS-TBB IC1216
LEVEL SHIFTER
ROM_DATA(0:15)
B 1/3,2/3
SH3_DATA(0:31)
R1312 47K
C1291 4.7/35
C1290 0.01
R1311 47K
C1289 0.01
PD6269A (MBM29F400BA-90PFTN) IC1213
BOOT ROM
R1315 47K
R1879 0
SH3_CSO
R1878 0
SH3_WRO
C1302 0.01
TC74ACT32F-TBB IC1226
SH3_CS6
SH3_A5
FIFO_DEC
SYNC_SW
DET
MASTER_EN
ROM_CTR_A
ROM_CTR_B
C1303 0.01
TC74ACT08F-TBB IC1227
IFO_CTR_A
IFO_CTR_B
ROM_CTR_A
ROM_CTR_B
ROM_CTR
DET
SYNC_SW
SYNC_EN_INV
ROM_CTR
BUS_EN

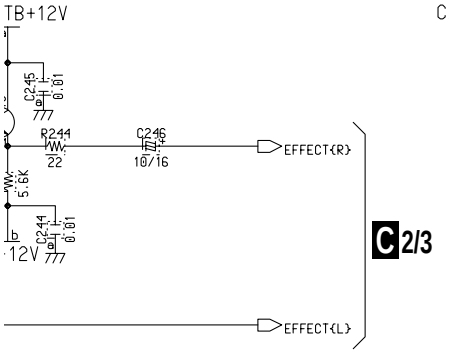
3.20 AV I/O ASSY (1/3)



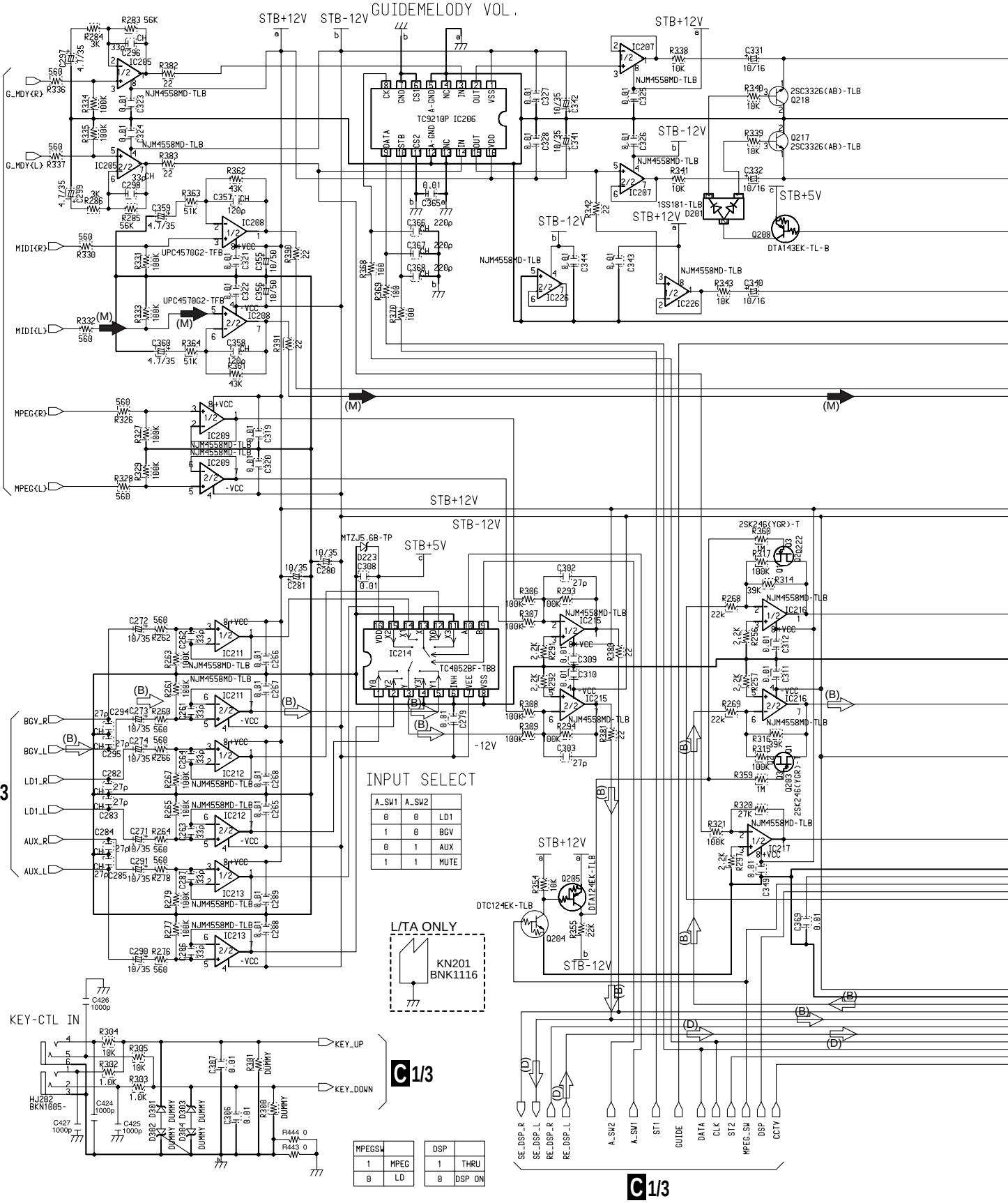


RESISTORS
Indicated in Ω 1/10w 5%
Tolerance unless other with notedK;KΩ M;MΩ

CAPACITORS
Indicated inCapacity(μF)/Voltage(V)
unless otherwise notedp;pF
Indicate without voltage is 50V except electrolytic capacitor



3.21 AV I/O ASSY (2/3)



C 2/3 AV I/O ASSY(2/3)
(L/TA : BWZ1870)
(MLW/HK : BWZ1830)

SIGNAL ROUTE
(D) : DSP SOUND SIGNAL
(B) : BGV SIGNAL (AUDIO)
: MAIN SOUND SIGNAL
(M) : MIDI SOUND SIGNAL

GUIDE	
1	OUTPUT L/R
0	OUTPUT GUIDEMELODY

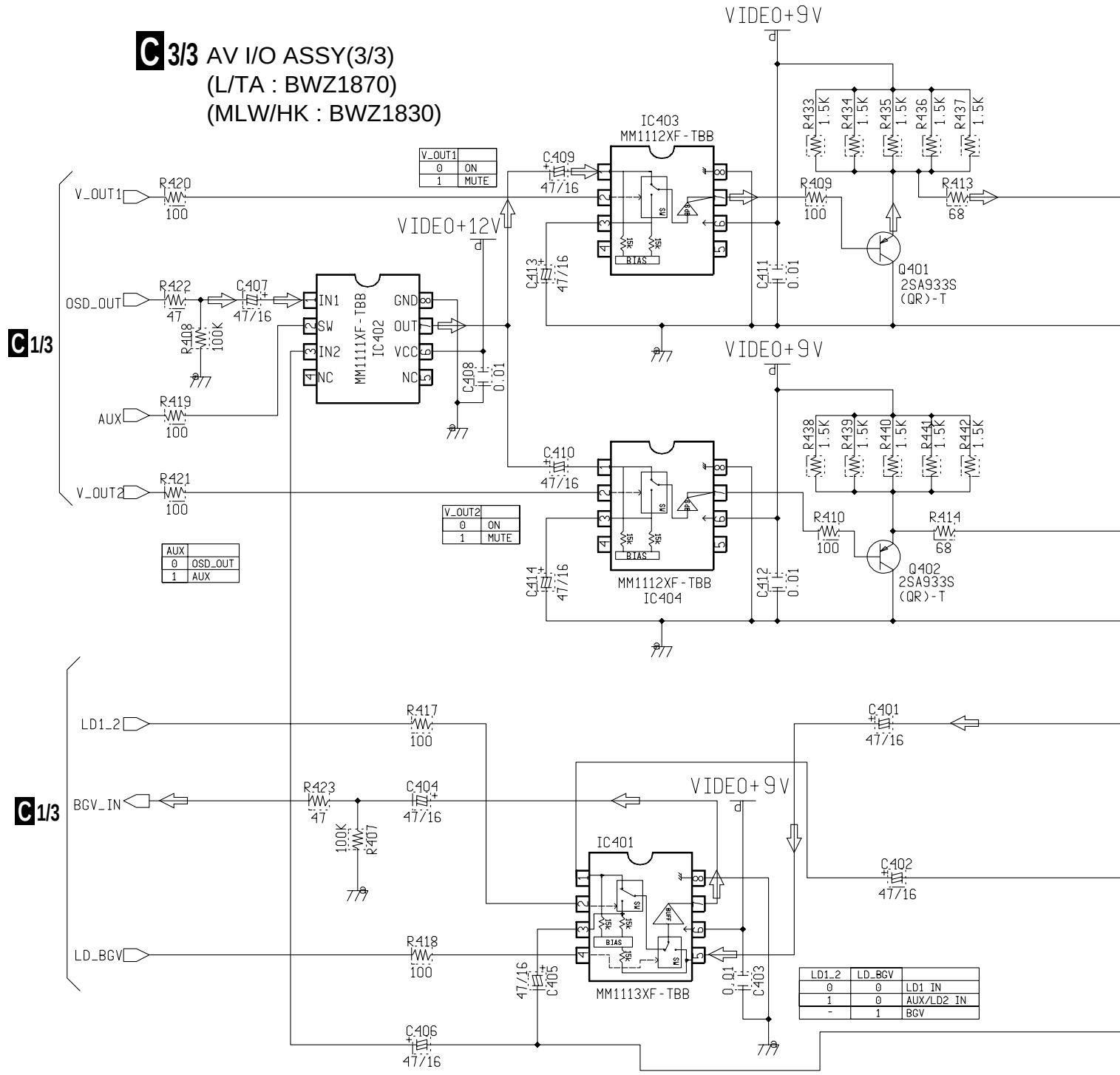
RESISTORS
Indicated in Ω 1/10w 5%
Tolerance unless other with noted K;KΩ M;MΩ
CAPACITORS
Indicated inCapacity(μF)/Voltage(V)
unless otherwise notedP;pF
Indicate without voltage is 50V except electrolytic capacitor

	USED	VACANT
R	250-391	275,351-352,356,386-389
C	259-370	329-330,339
L		
D	201-304	202,204,212-223,225-300
Q	203-222	207
IC	205-227	210

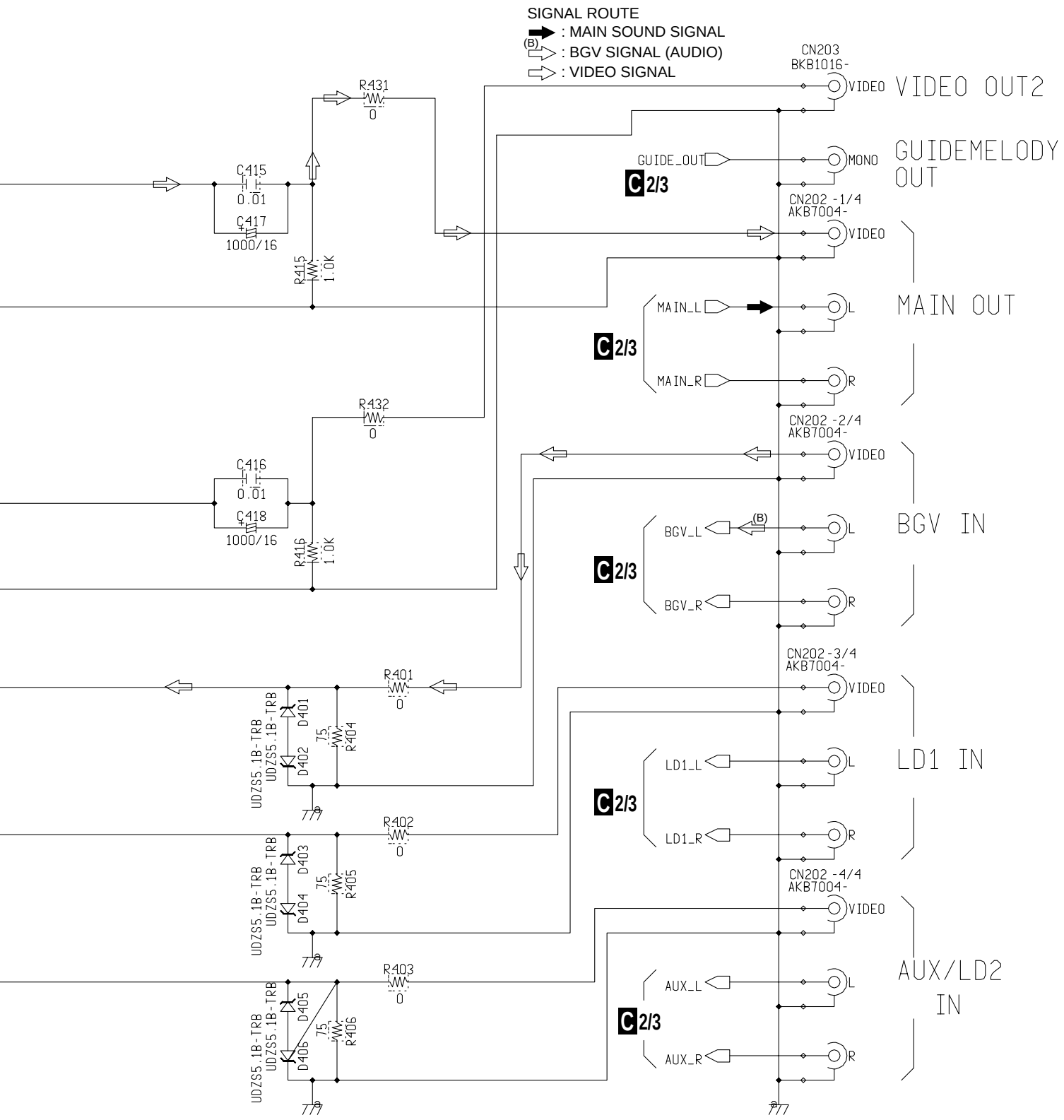
MUTE	
1	ON
0	OFF

CCTV	
1	THRU
0	LPF ON

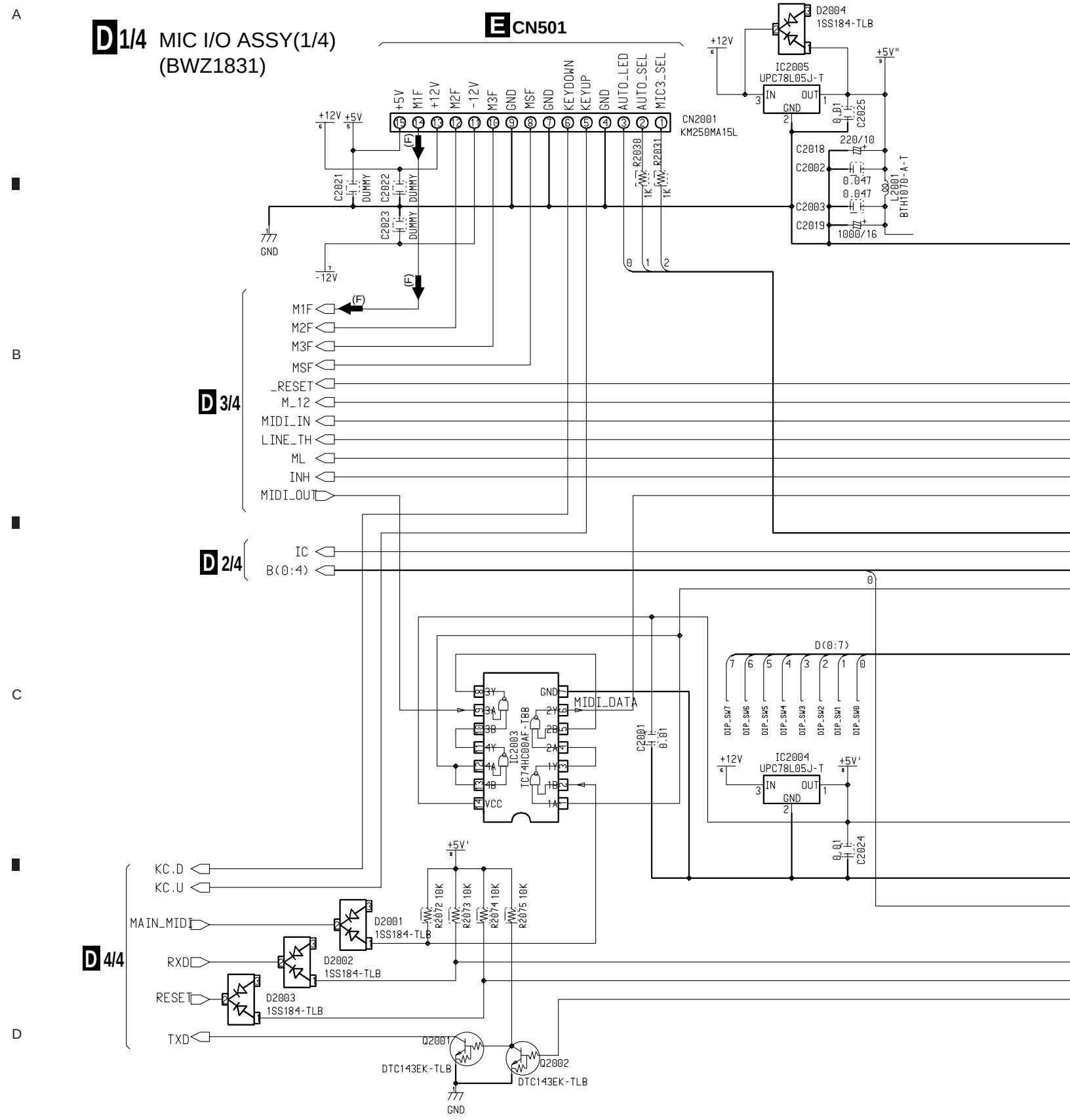
3.22 AV I/O ASSY (3/3)

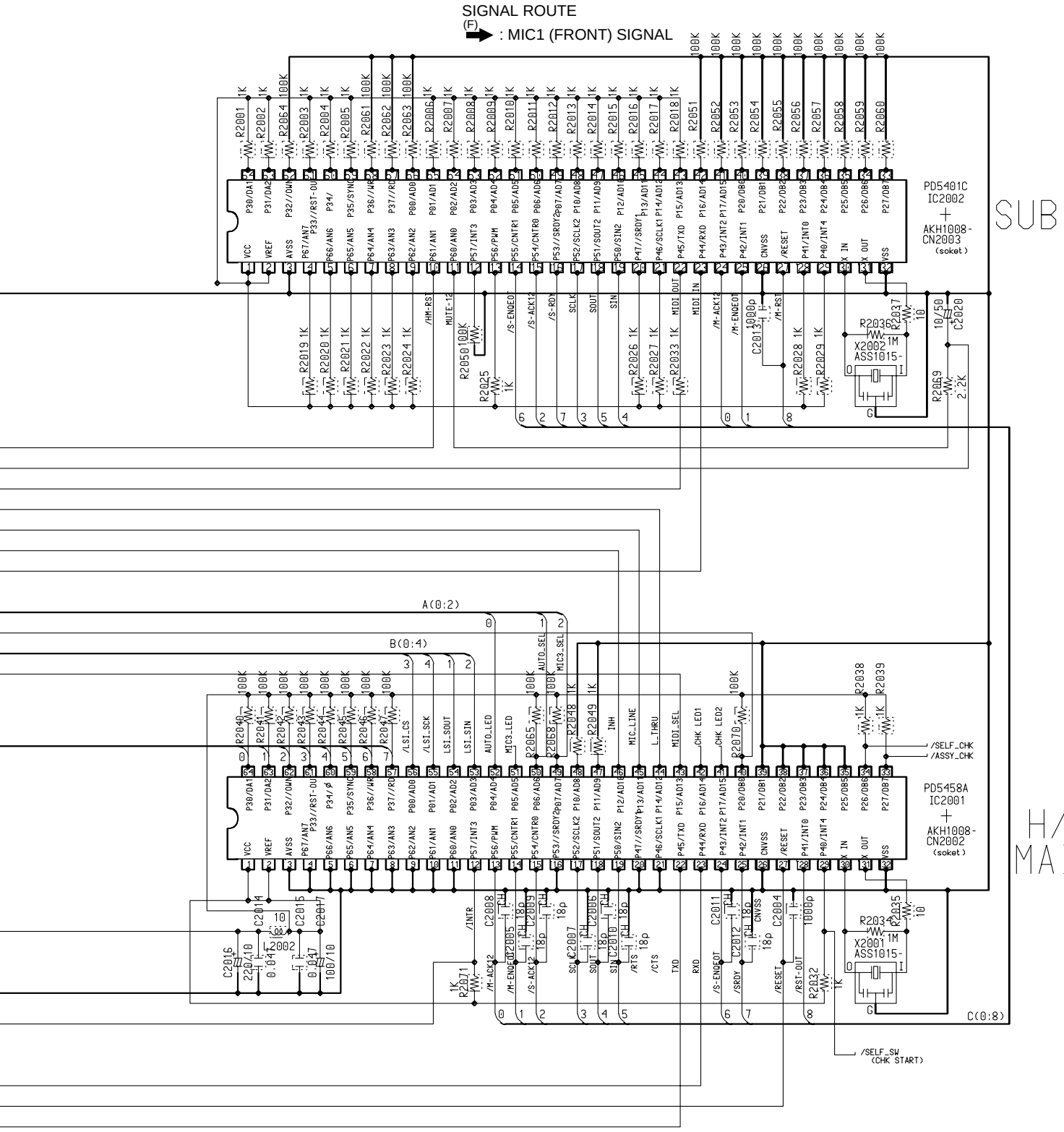


RESISTORS
Indicated in 1/10w 5%
Tolerance unless other with noted K;K M;M
CAPACITORS
Indicated inCapacity(F)/Voltage(V)
unless otherwise noted p;pF
Indicate without voltage is 50V except electrolytic capacitor


SIGNAL ROUTE
: MAIN SOUND SIGNAL
(B) : BGV SIGNAL (AUDIO)
: VIDEO SIGNAL
CN203
BKB1016-
VIDEO
VIDEO OUT2
GUIDE_OUT
MONO
GUIDEMELODY OUT
C 2/3
CN202 -1/4
AKB7004-
VIDEO
MAIN_L
L
MAIN OUT
C 2/3
MAIN_R
R
CN202 -2/4
AKB7004-
VIDEO
BGV_L
(B)
L
BGV IN
C 2/3
BGV_R
R
CN202 -3/4
AKB7004-
VIDEO
LD1_L
L
LD1 IN
C 2/3
LD1_R
R
CN202 -4/4
AKB7004-
VIDEO
AUX_L
L
AUX/LD2 IN
C 2/3
AUX_R
R
R431
0
C415
0.01
C417
1000/16
R415
1.0K
R432
0
C416
0.01
C418
1000/16
R416
1.0K
R401
0
R402
0
R403
0
UDZS5.1B-TRB
D401
D402
D403
D404
D405
D406
75
R404
R405
R406

3.23 MIC I/O ASSY (1/4)





RESISTORS

Indicated in Ω 1/10w 5%

Tolerance unless other with noted K;KΩ M;MΩ

CAPACITORS

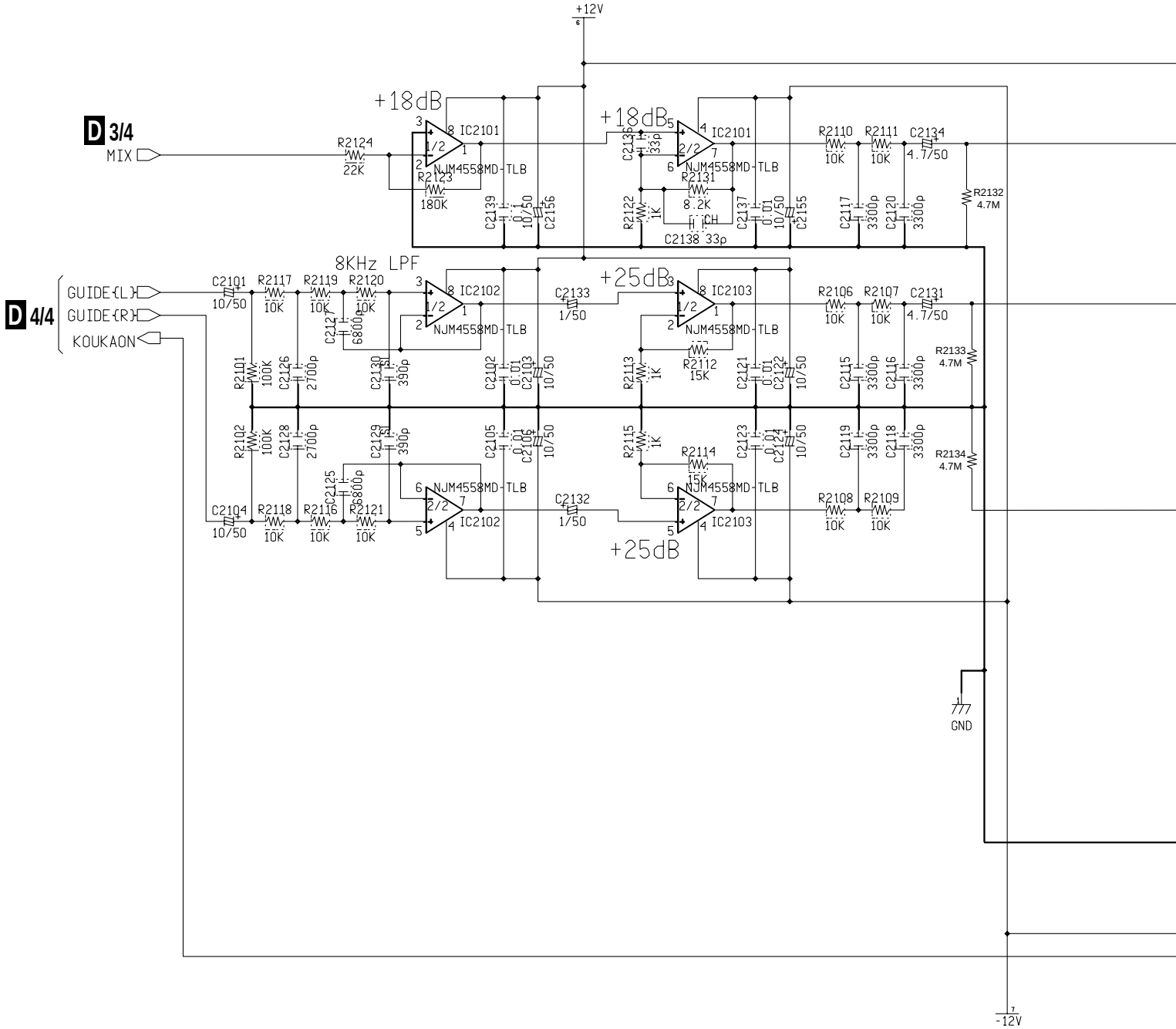
Indicated inCapacity(uF)/Voltage(V)

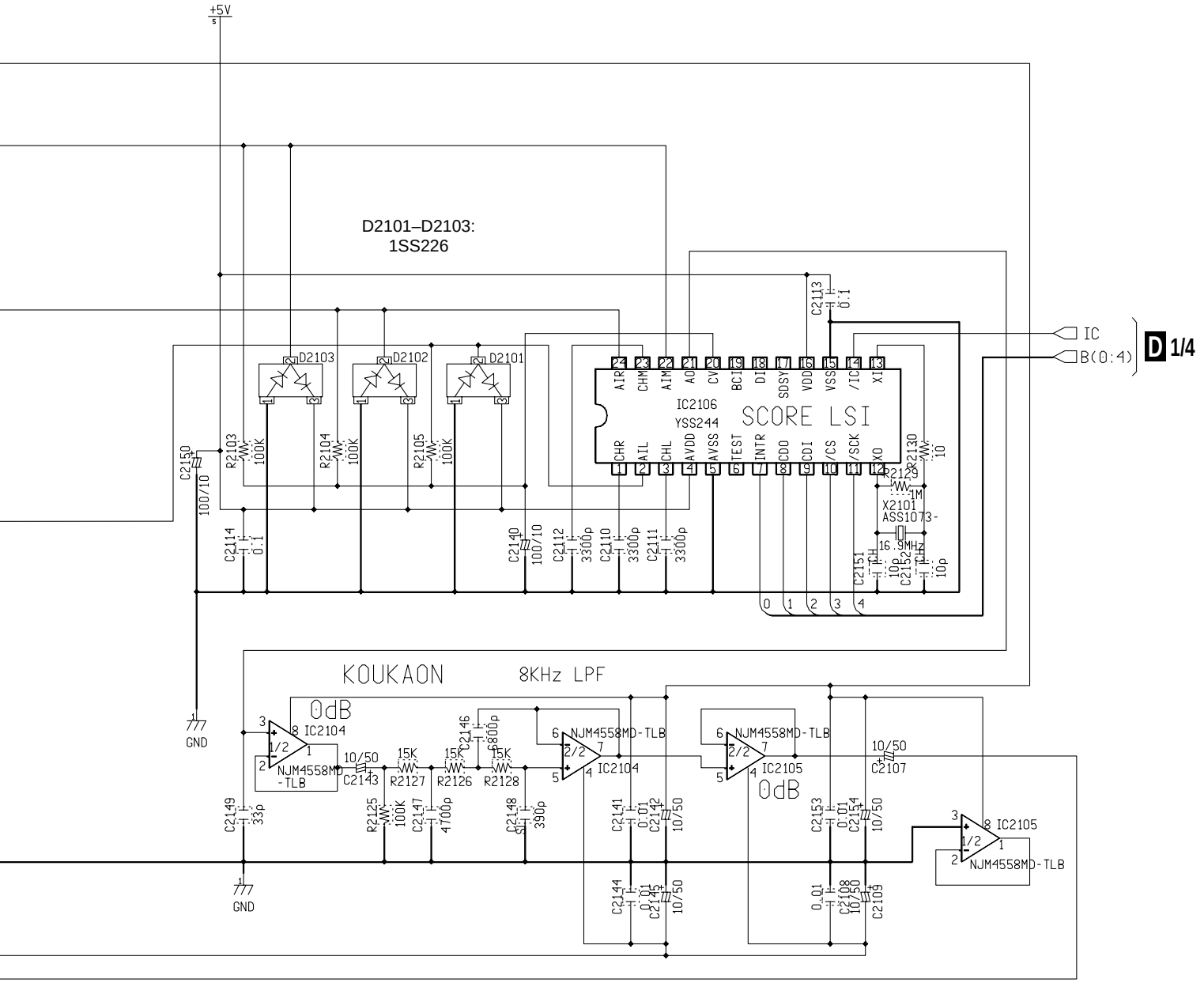
unless otherwise noted p;pF

Indicate without voltage is 50V except electrolytic capacitor

3.24 MIC I/O ASSY (2/4)

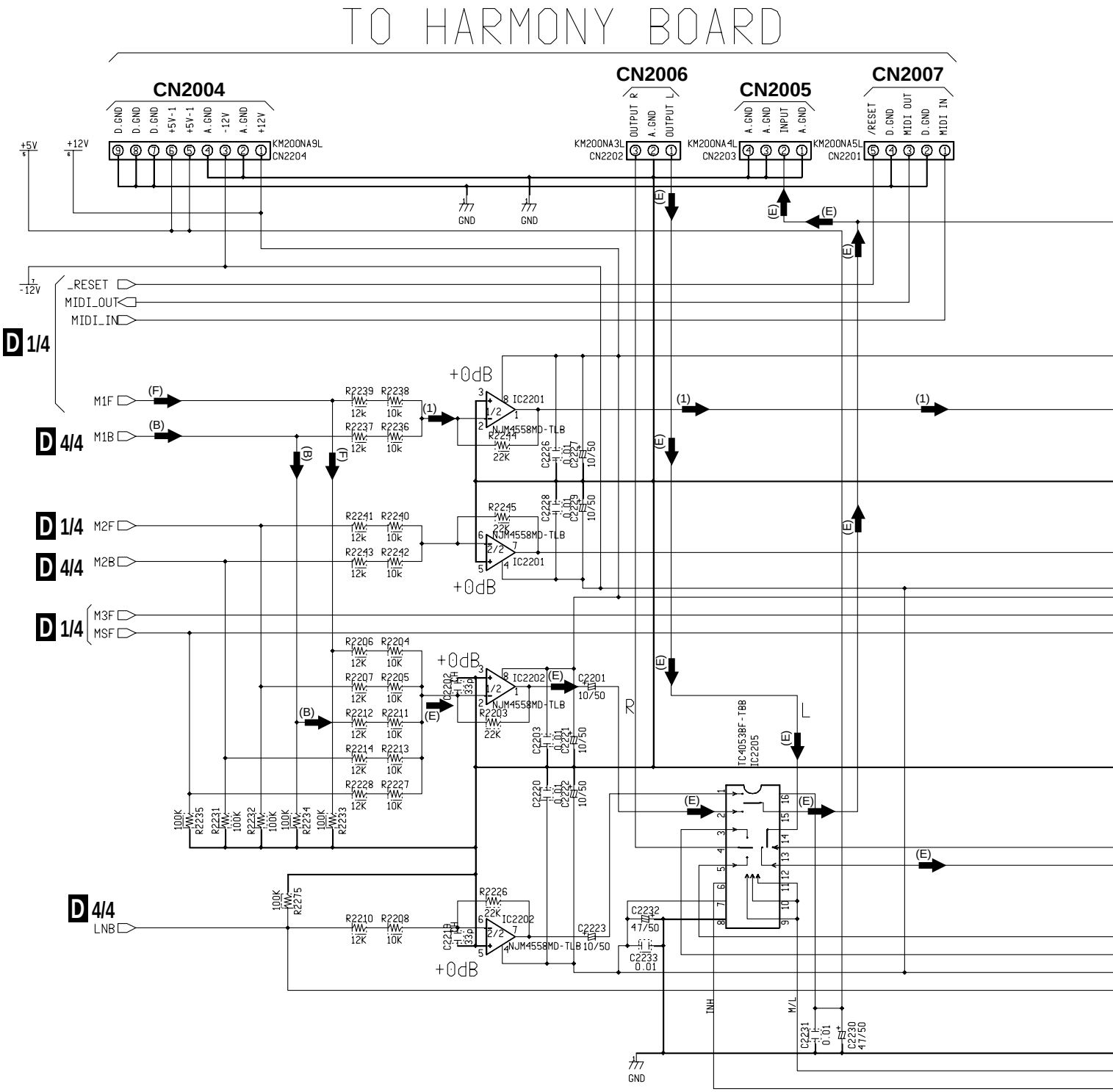
D 2/4 MIC I/O ASSY(2/4)
(BWZ1831)

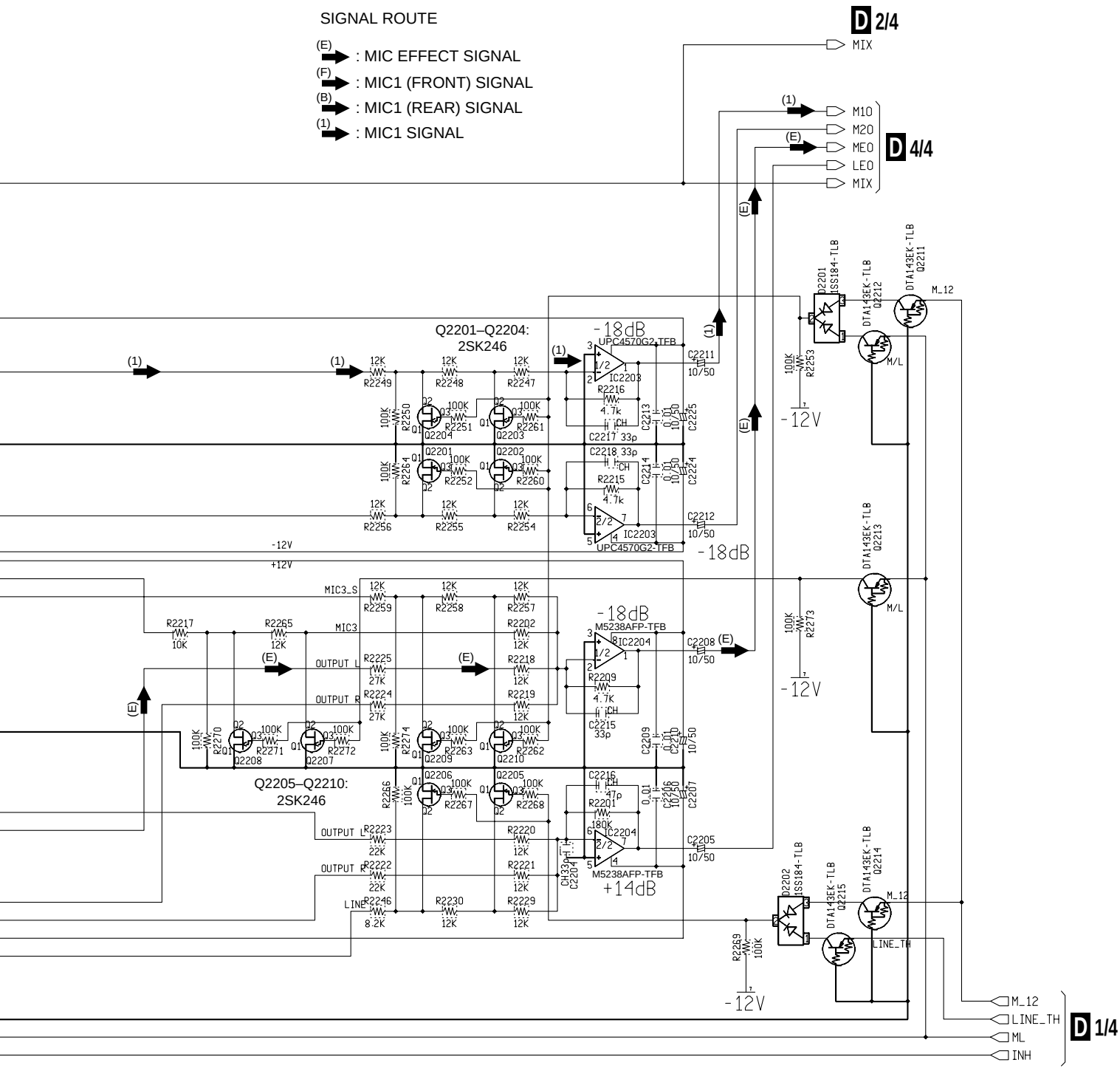



+5V
D2101–D2103:
1SS226
D2103
D2102
D2101
IC2106
YSS244
SCORE LSI
AIR
CHR
AIM
AOL
CVL
BCI
DI
SDSY
VDD
VSS
/IC
XI
CHR
AIL
CHL
AVDD
AVSS
TEST
INTR
CDO
CDI
/CS
/SCK
XO
IC
B(0:4)
D 1/4
X2101
ASS1073-
16.9MHz
KOUKAON
8KHz LPF
0dB
IC2104
NJM4558MD-TLB
IC2105
GND

3.25 MIC I/O ASSY (3/4)

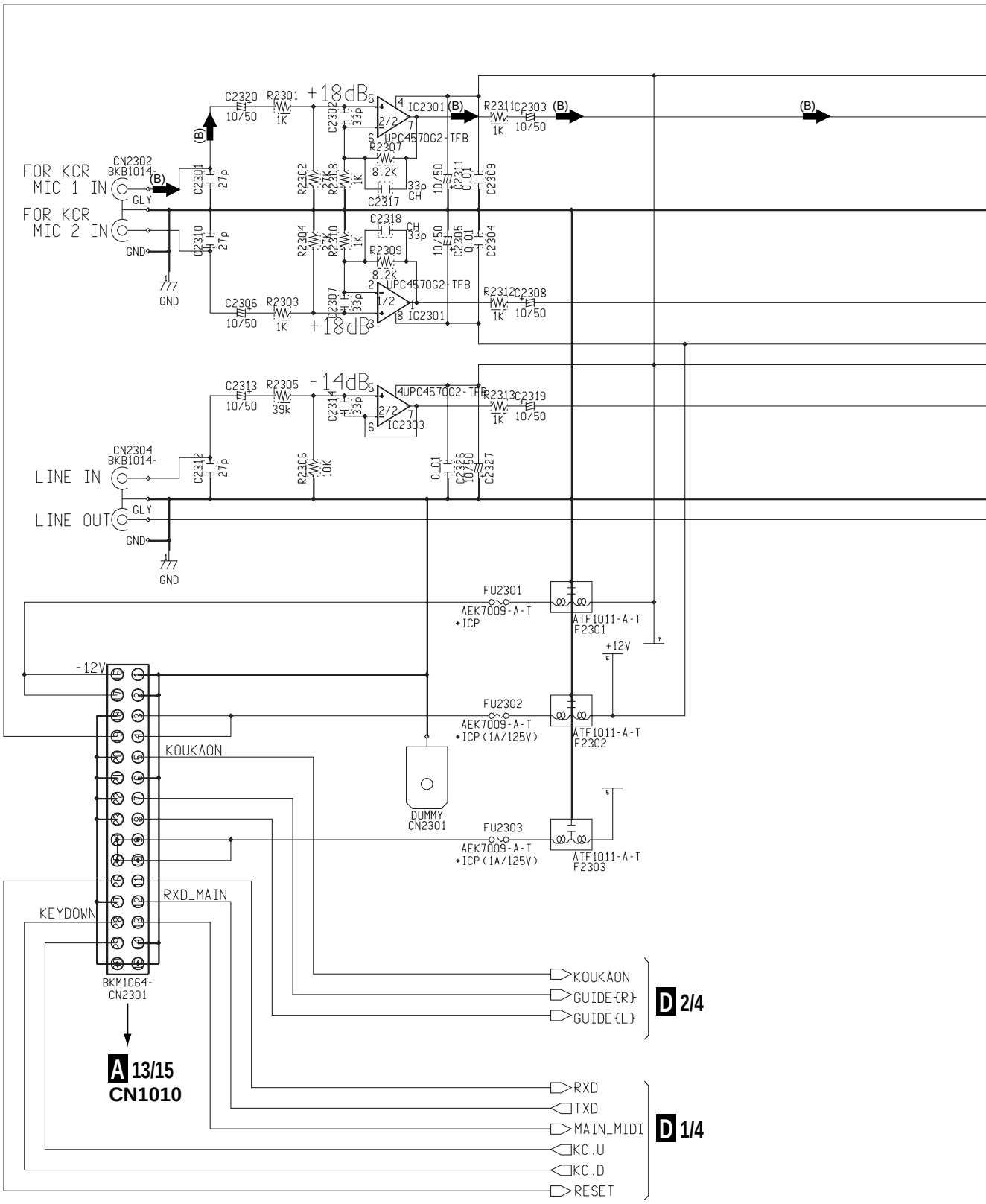
D 3/4 MIC I/O ASSY(3/4)
(BWZ1831)

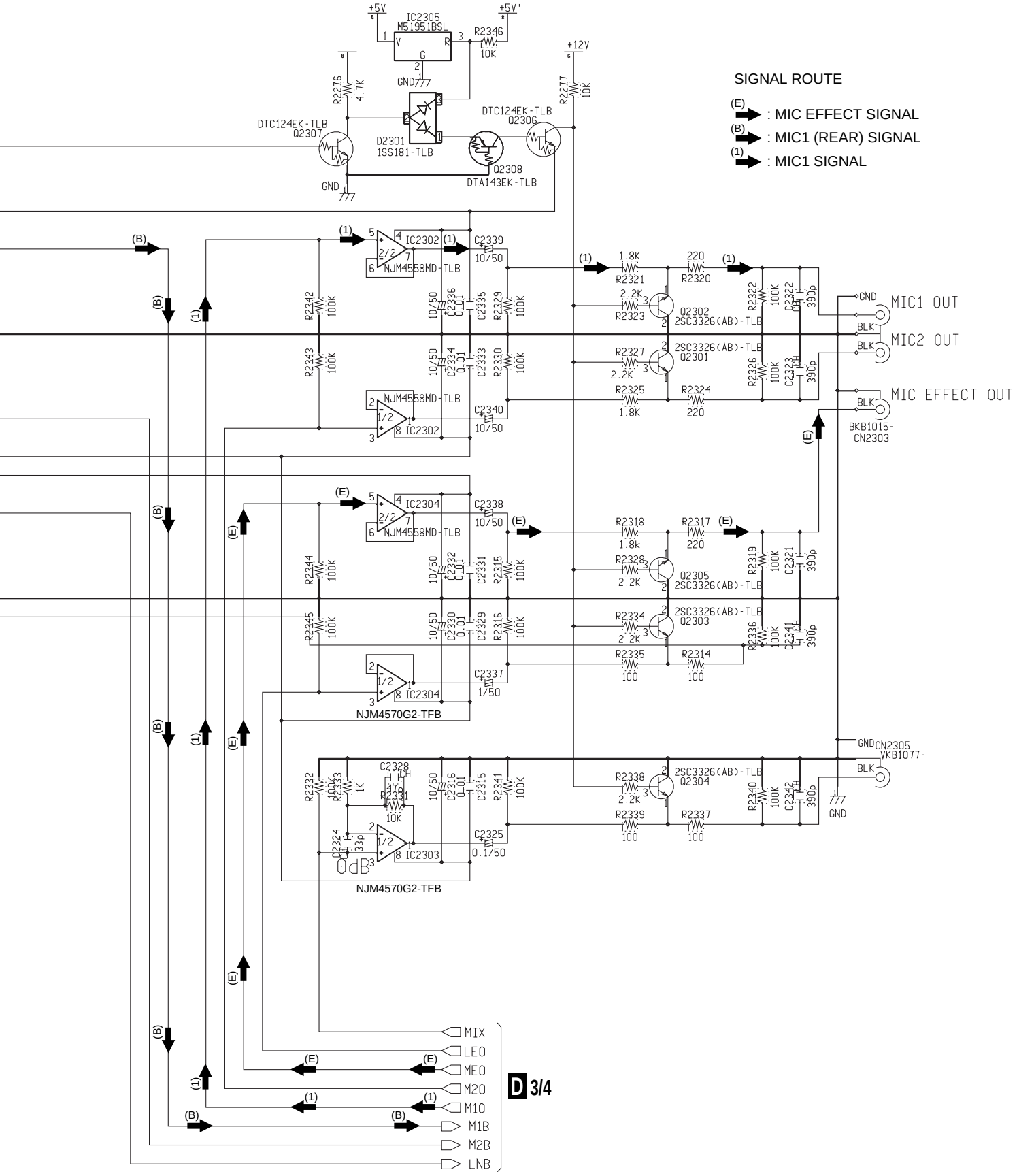



SIGNAL ROUTE
(E) : MIC EFFECT SIGNAL
(F) : MIC1 (FRONT) SIGNAL
(B) : MIC1 (REAR) SIGNAL
(1) : MIC1 SIGNAL
D 2/4
MIX
(1)
M10
M20
(E)
MEO
LEO
MIX
D 4/4
Q2201–Q2204:
2SK246
-18dB
UPC4570G2-TFB
IC2203
-12V
+12V
DTA143EK-TLB
Q2212
Q2213
Q2214
Q2215
DSS184-TLB
Q2201
Q2202
M_12
M/L
LINE_TH
MIC3_S
MIC3
OUTPUT L
OUTPUT R
LINE
M5238AFP-TFB
IC2204
+14dB
Q2205–Q2210:
2SK246
M_12
LINE_TH
ML
INH
D 1/4

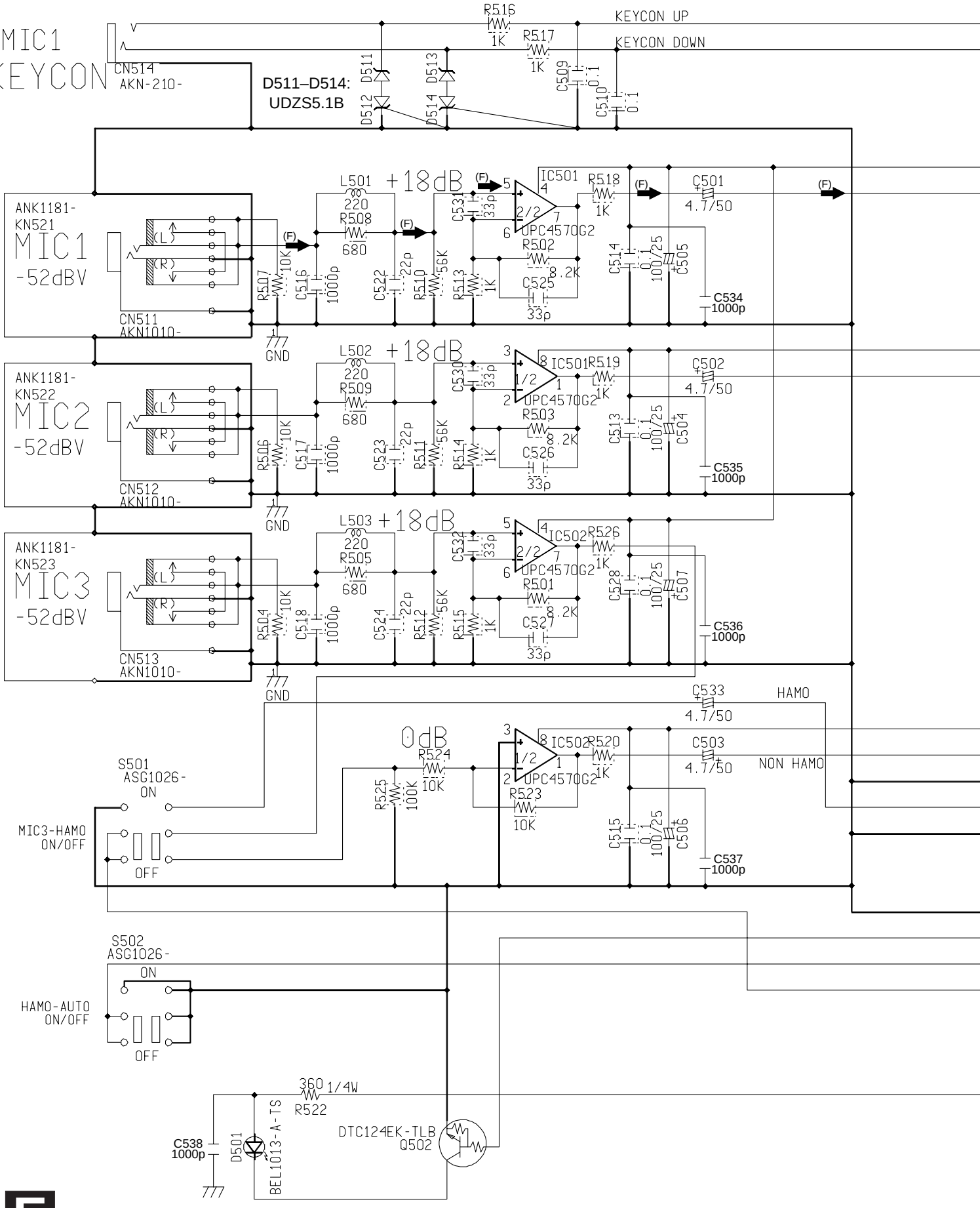
3.26 MIC I/O ASSY (4/4)

D 4/4 MIC I/O ASSY(4/4)
(BWZ1831)




SIGNAL ROUTE
(E) : MIC EFFECT SIGNAL
(B) : MIC1 (REAR) SIGNAL
(1) : MIC1 SIGNAL
IC2305 M51951BSL
R2346 10K
+5V
+5V'
+12V
R2276 4.7K
R2277 10K
GND777
DTC124EK-TLB Q2307
DTC124EK-TLB Q2306
D2301 1SS181-TLB
Q2308 DTA143EK-TLB
IC2302 NJM4558MD-TLB
IC2304 NJM4558MD-TLB
IC2303 NJM4570G2-TFB
0dB
MIC1 OUT
MIC2 OUT
MIC EFFECT OUT
BKB1015-CN2303
CN2305 VKB1077-
MIX
LEO
MEO
M2O
M1O
M1B
M2B
LNB
D 3/4

3.27 MIC ASSY


MIC1
KEYCON
CN514
AKN-210-
D511–D514:
UDZS5.1B
D511
D512
D513
D514
R516
1K
R517
1K
KEYCON UP
KEYCON DOWN
C509
0.1
C510
0.1
ANK1181-
KN521
MIC1
-52dBV
CN511
AKN1010-
L501 +18dB
220
R508
680
R507
10K
C516
1000p
C522
22p
R510
56K
R513
1K
C531
33p
IC501
1/2
UPC4570G2
R502
8.2K
C525
33p
R518
1K
C501
4.7/50
C514
0.1
100/25
C505
C534
1000p
ANK1181-
KN522
MIC2
-52dBV
CN512
AKN1010-
L502 +18dB
220
R509
680
R506
10K
C517
1000p
C523
22p
R511
56K
R514
1K
C530
33p
IC501
1/2
UPC4570G2
R503
8.2K
C526
33p
R519
1K
C502
4.7/50
C513
0.1
100/25
C504
C535
1000p
ANK1181-
KN523
MIC3
-52dBV
CN513
AKN1010-
L503 +18dB
220
R505
680
R504
10K
C518
1000p
C524
22p
R512
56K
R515
1K
C532
33p
IC502
1/2
UPC4570G2
R501
8.2K
C527
33p
R526
1K
C528
0.1
100/25
C507
C536
1000p
GND
C533
4.7/50
HAMO
0dB
R524
10K
R525
100K
IC502
1/2
UPC4570G2
R523
10K
R520
1K
C503
4.7/50
NON HAMO
C515
0.1
100/25
C506
C537
1000p
S501
ASG1026-
ON
MIC3-HAMO
ON/OFF
OFF
S502
ASG1026-
ON
HAMO-AUTO
ON/OFF
OFF
360 1/4W
R522
C538
1000p
D501
BEL1013-A-TS
DTC124EK-TLB
Q502
(F)

E

MIC ASSY(BWZ1860)

SIGNAL ROUTE

(F) : MIC1 (FRONT) SIGNAL

RESISTORS

Indicated in 1/10w 5%

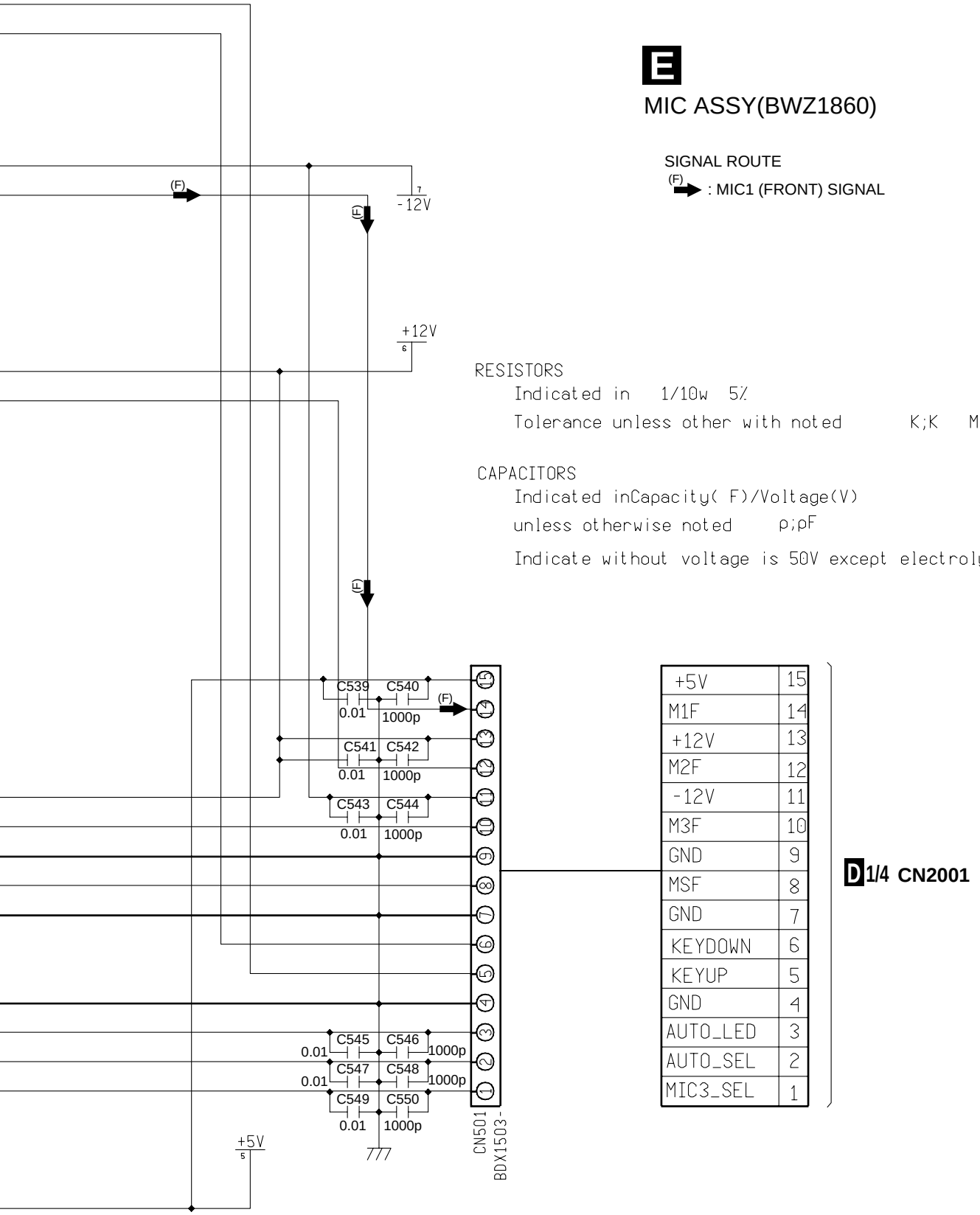
Tolerance unless other with noted K;K M;M

CAPACITORS

Indicated inCapacity(F)/Voltage(V)

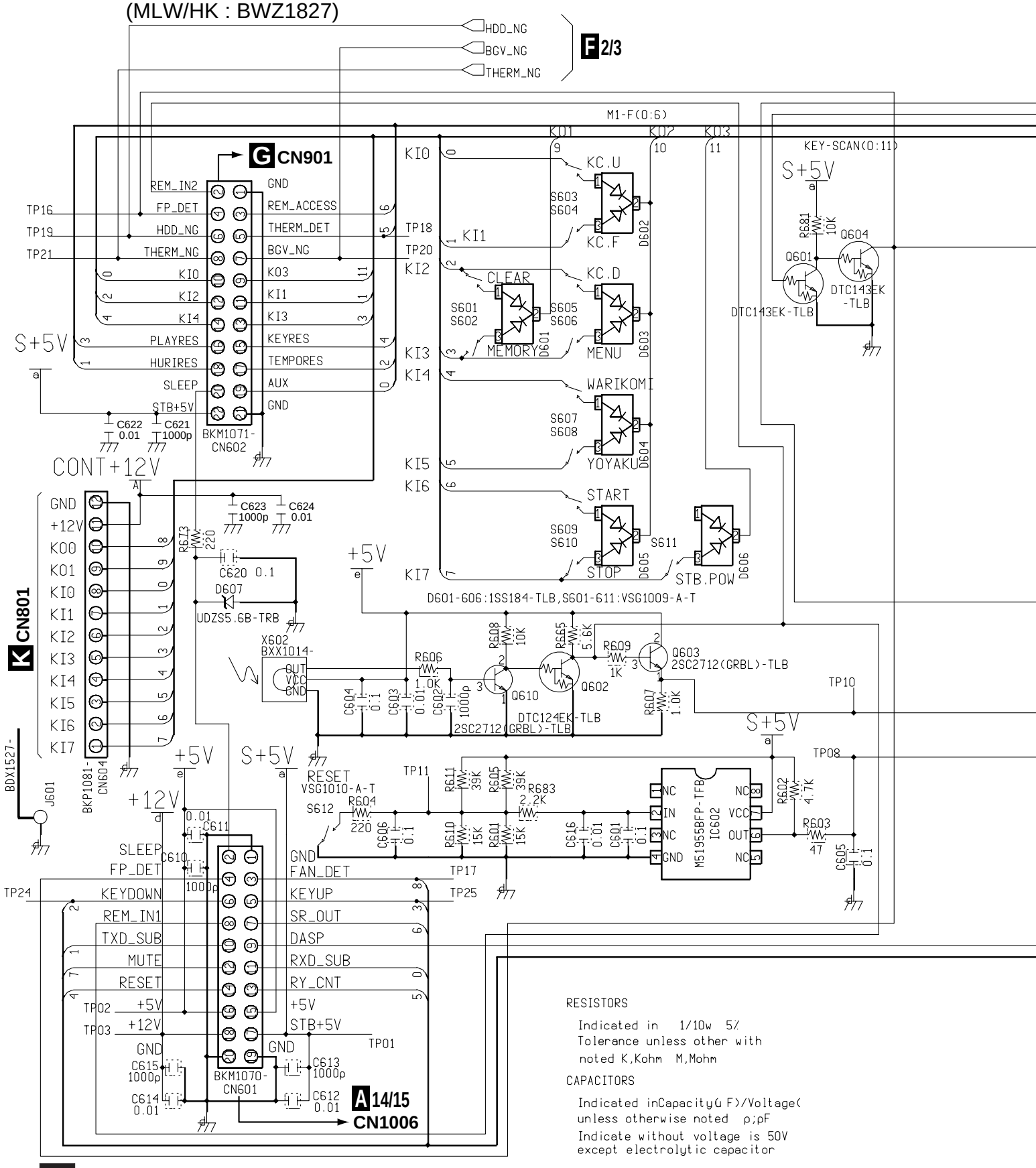
unless otherwise noted p;pF

Indicate without voltage is 50V except electrolytic capacitor



3.28 FRONT ASSY (1/3)

F 1/3 FRONT ASSY(1/3)
(L/TA : BWZ1869)
(MLW/HK : BWZ1827)

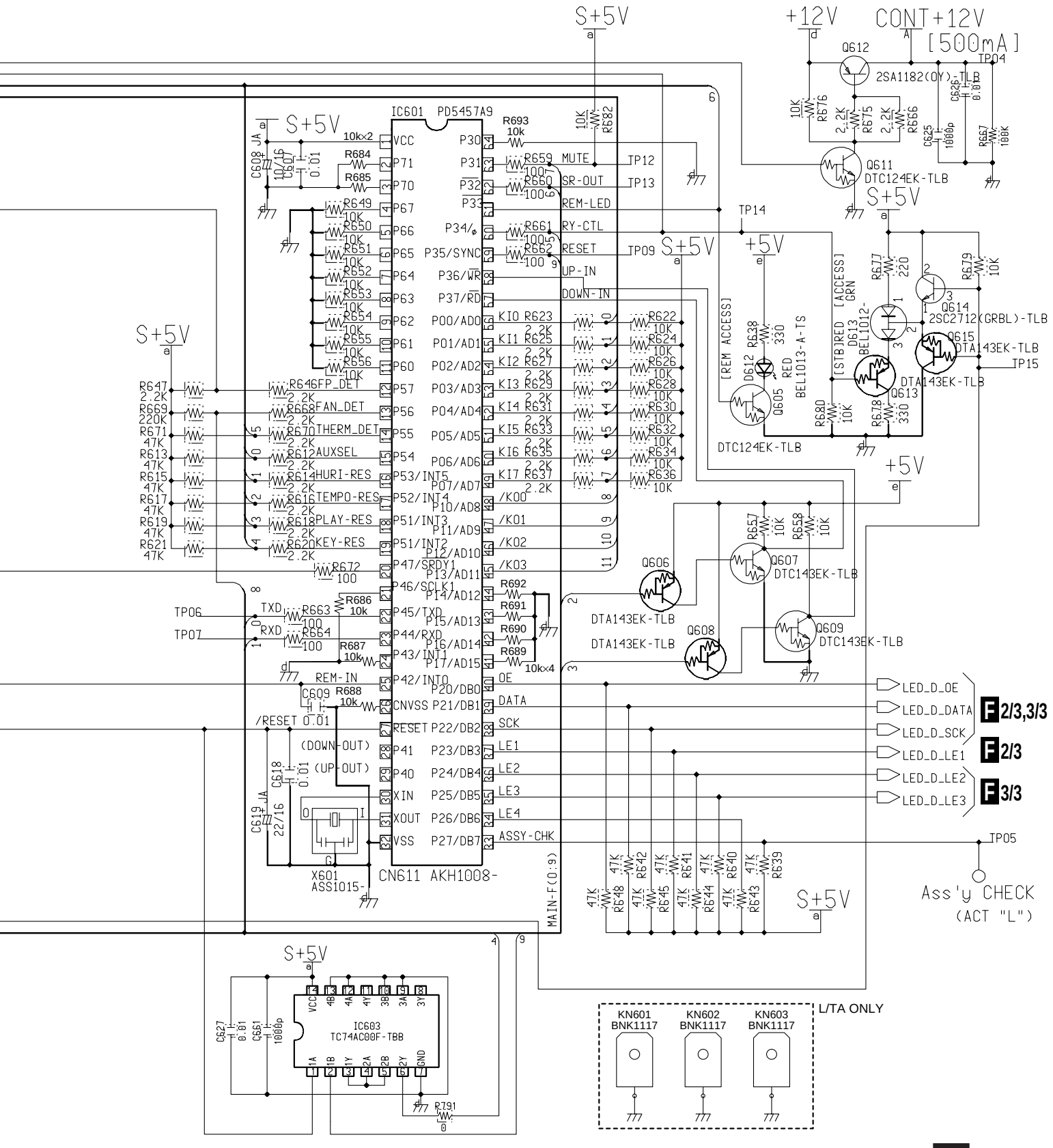


RESISTORS

Indicated in 1/10w 5%
Tolerance unless other with
noted K,Kohm M,Mohm

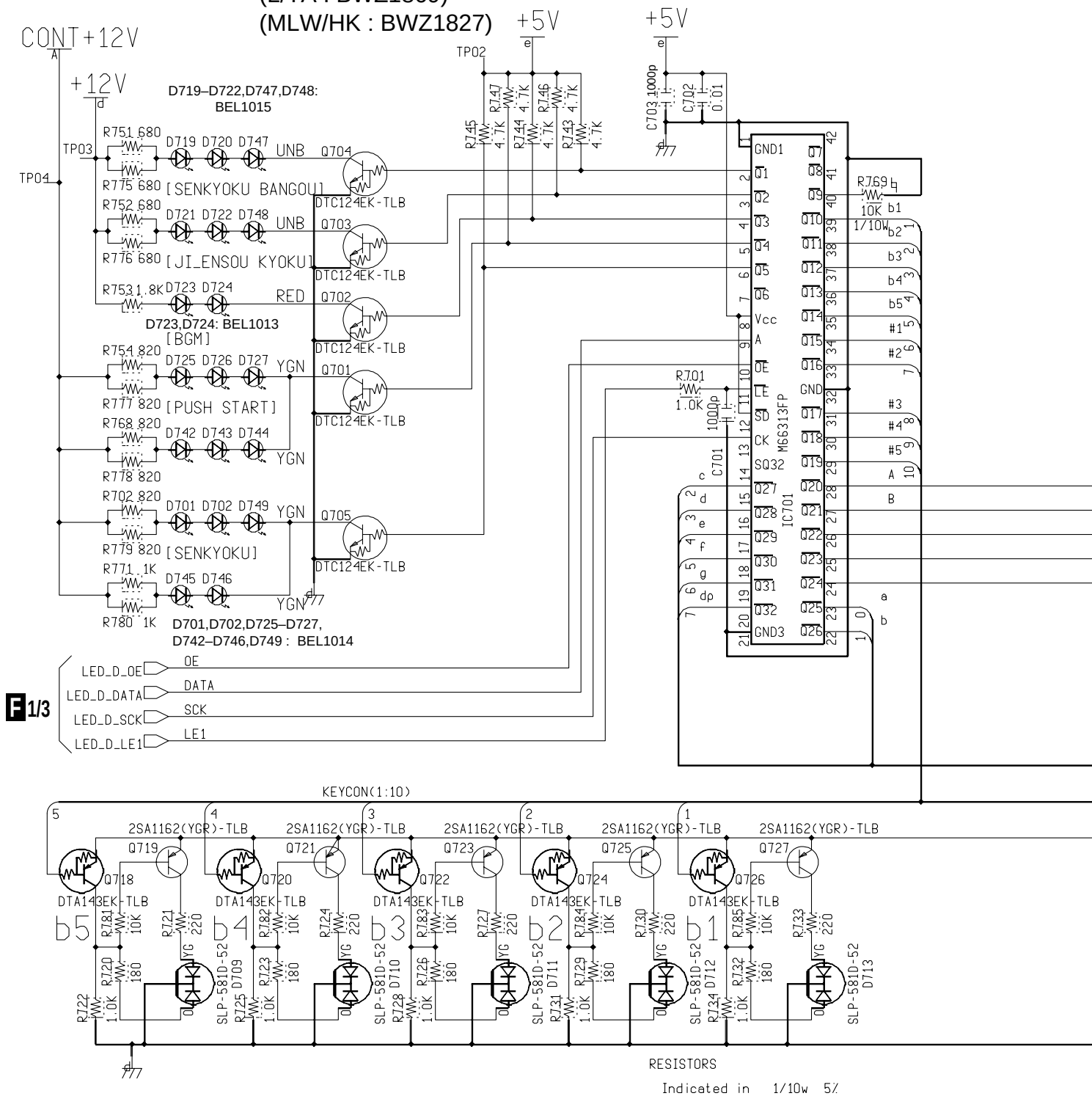
CAPACITORS

Indicated inCapacity(μF)/Voltage(
unless otherwise noted p;pF
Indicate without voltage is 50V
except electrolytic capacitor


S+5V
+12V
CONT+12V
[500mA]
Q612
2SA1182(OY)-TLB
Q611
DTC124EK-TLB
IC601 PD5457A9
CN611 AKH1008-
X601
ASS1015-
IC603
TC74AC00F-TBB
DTA143EK-TLB
DTC143EK-TLB
DTC124EK-TLB
Q614
2SC2712(GRBL)-TLB
Q615
Q613
Q605
Q606
Q607
Q608
Q609
D612
D613
[REM ACCESS]
[STBY]RED
[ACCESS]GRN
MUTE
SR-OUT
REM-LED
RY-CTL
RESET
UP-IN
DOWN-IN
REM-IN
(DOWN-OUT)
(UP-OUT)
TXD
RXD
OE
DATA
SCK
LE1
LE2
LE3
LE4
ASSY-CHK
LED_D_OE
LED_D_DATA
LED_D_SCK
LED_D_LE1
LED_D_LE2
LED_D_LE3
F2/3,3/3
F2/3
F3/3
TP04
TP05
TP06
TP07
TP09
TP12
TP13
TP14
TP15
Ass'y CHECK
(ACT "L")
MAIN-F(0:9)
L/TA ONLY
KN601 BNK1117
KN602 BNK1117
KN603 BNK1117

3.29 FRONT ASSY (2/3)

F 2/3 FRONT ASSY(2/3)
(L/TA : BWZ1869)
(MLW/HK : BWZ1827)

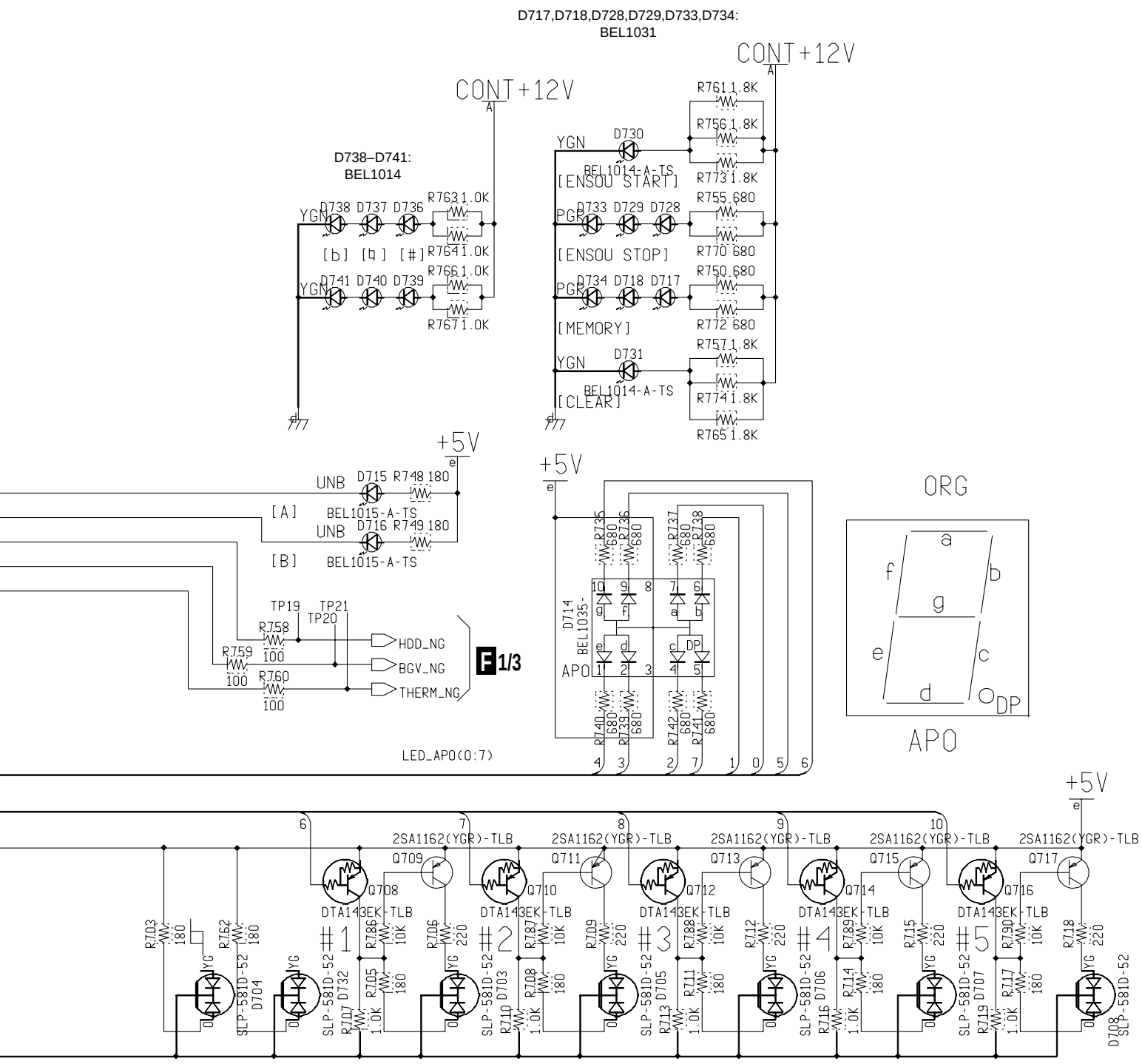


RESISTORS

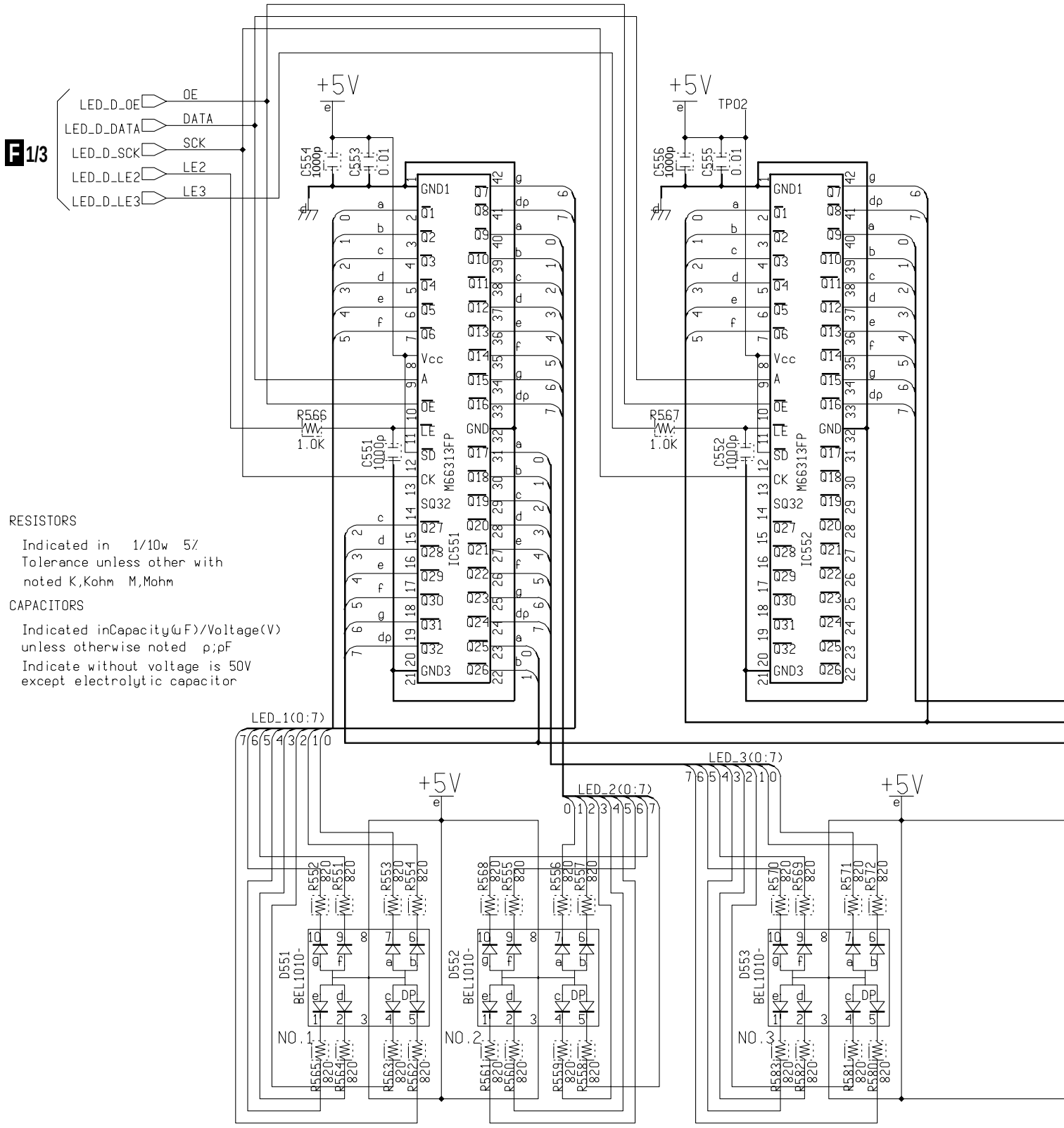
Indicated in 1/10w 5%
Tolerance unless other with
noted K,Kohm M,Mohm

CAPACITORS

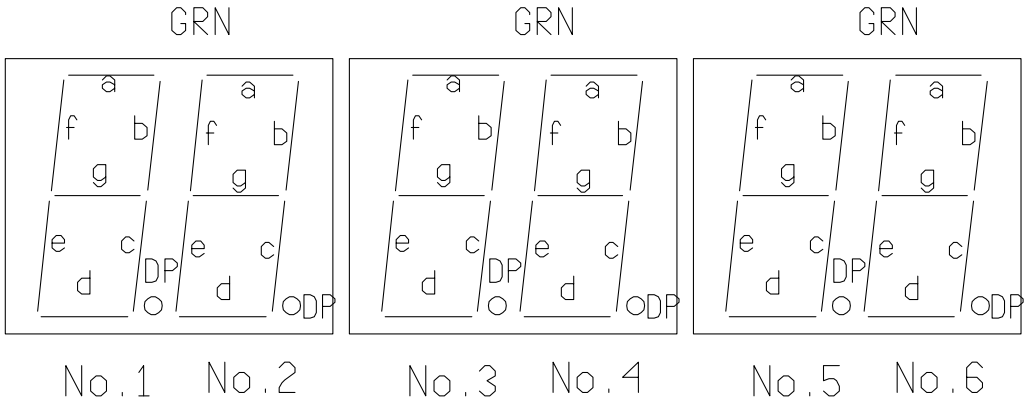
Indicated inCapacity(μF)/Voltage(V)
unless otherwise noted p;pF
Indicate without voltage is 50V
except electrolytic capacitor

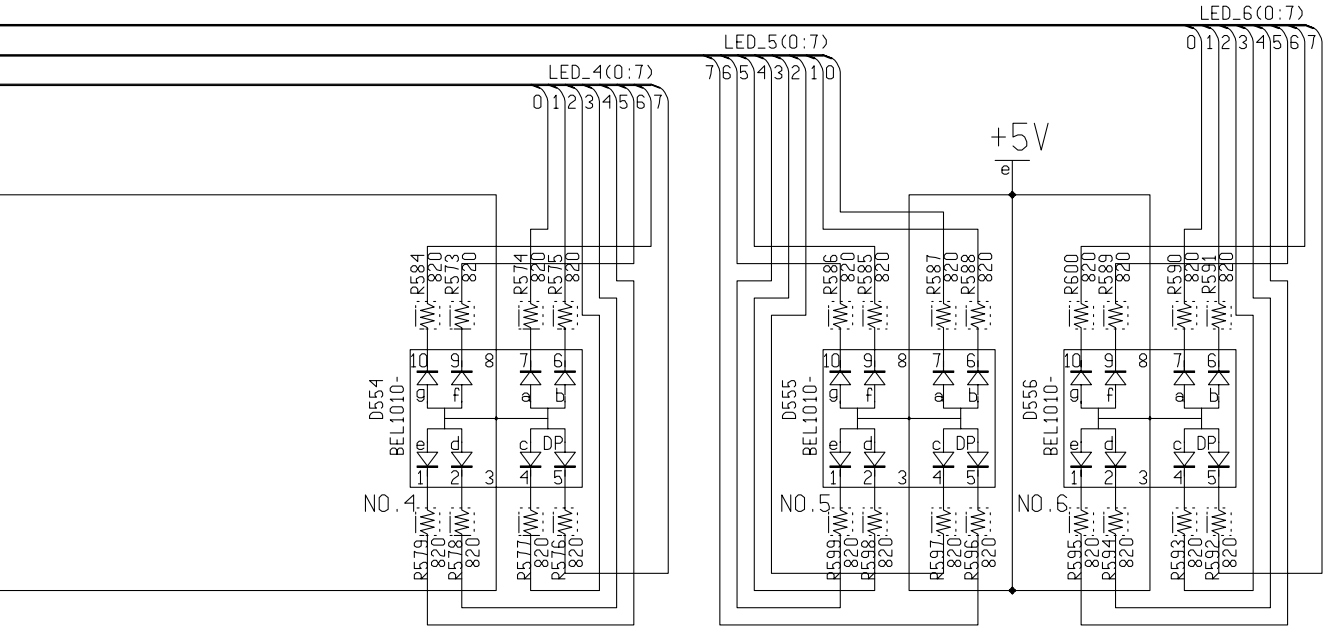

D717,D718,D728,D729,D733,D734:
BEL1031
D738–D741:
BEL1014
CONT+12V
CONT+12V
YGN
D738 D737 D736
R763 1.0K
[b] [♮] [#]
R764 1.0K
YGN
D741 D740 D739
R765 1.0K
R767 1.0K
YGN
D730
BEL1014-A-TS
[ENSOU START]
R761 1.8K
R756 1.8K
R773 1.8K
PGR
D733 D729 D728
[ENSOU STOP]
R755 680
R770 680
PGR
D734 D718 D717
[MEMORY]
R750 680
R772 680
YGN
D731
BEL1014-A-TS
[CLEAR]
R757 1.8K
R774 1.8K
R765 1.8K
+5V
UNB
D715 R748 180
[A]
BEL1015-A-TS
UNB
D716 R749 180
[B]
BEL1015-A-TS
TP19
TP21
TP20
R758
R759
R760
100
HDD_NG
BGV_NG
THERM_NG
F 1/3
LED_APO(0:7)
+5V
D714
BEL1035-
APO
R735 680
R736 680
R737 680
R738 680
R740 680
R739 680
R742 680
R741 680
ORG
APO
+5V
2SA1162(YGR)-TLB
Q709
Q708
DTA143EK-TLB
Q711
Q710
Q713
Q712
Q715
Q714
Q717
Q716
#1
#2
#3
#4
#5
R703 180
R762 180
R786 10K
R705 180
R706 220
R787 10K
R708 180
R709 220
R788 10K
R711 180
R712 220
R789 10K
R714 180
R715 220
R790 10K
R717 180
R718 220
SLP-5810-52
D704
D732
R707 1.0K
D703
R710 1.0K
D705
R713 1.0K
D706
R716 1.0K
D707
R719 1.0K
D708

3.30 FRONT ASSY (3/3)



F 3/3 FRONT ASSY(3/3)
(L/TA : BWZ1869)
(MLW/HK : BWZ1827)

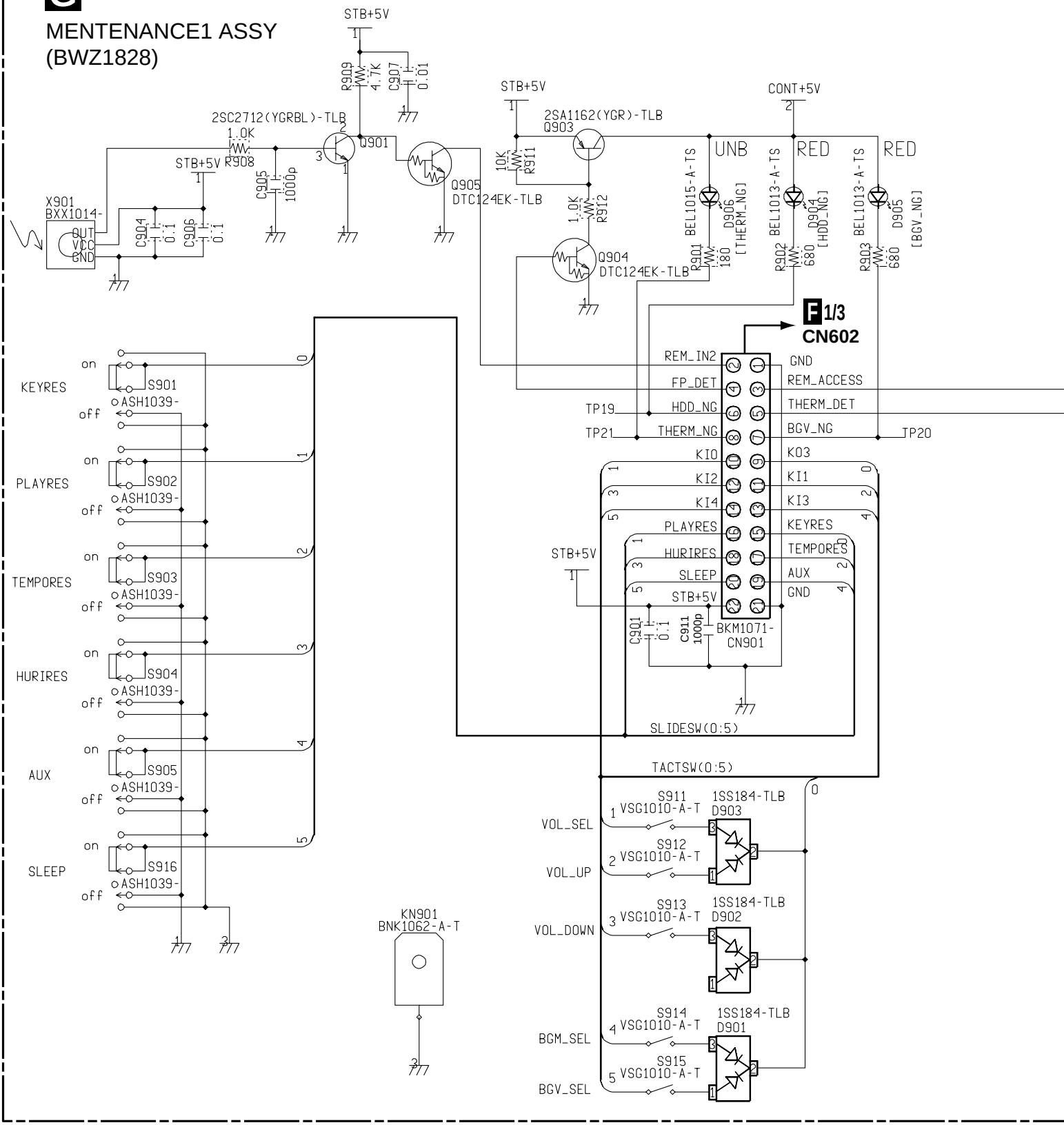




3.31 MENTENANCE1 and HDD DETECT ASSEMBLIES

G

MENTENANCE1 ASSY
(BWZ1828)

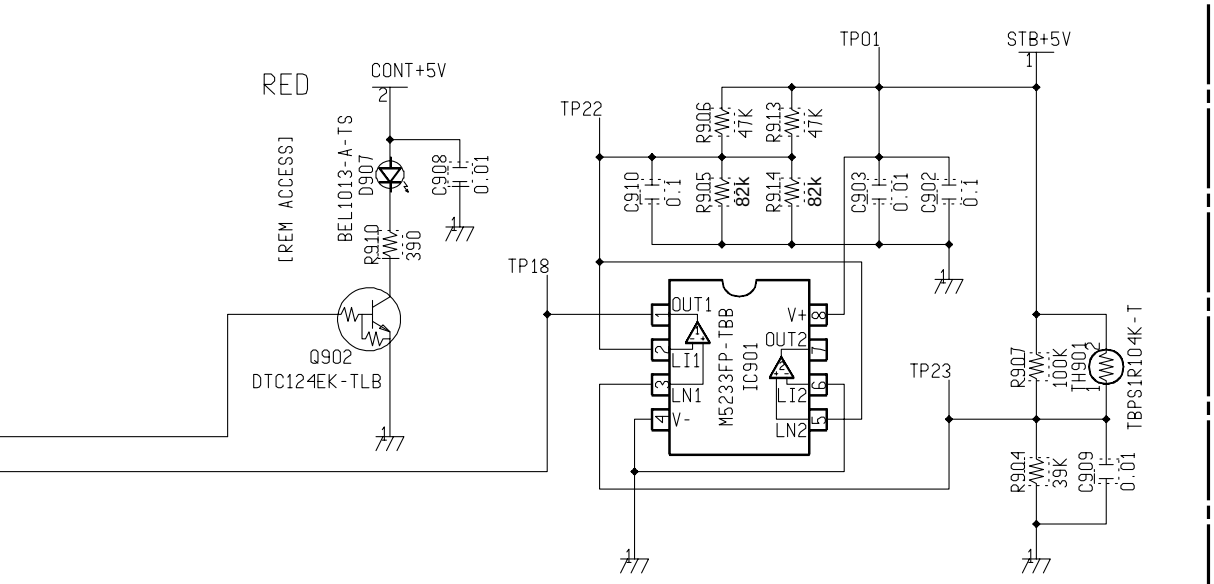


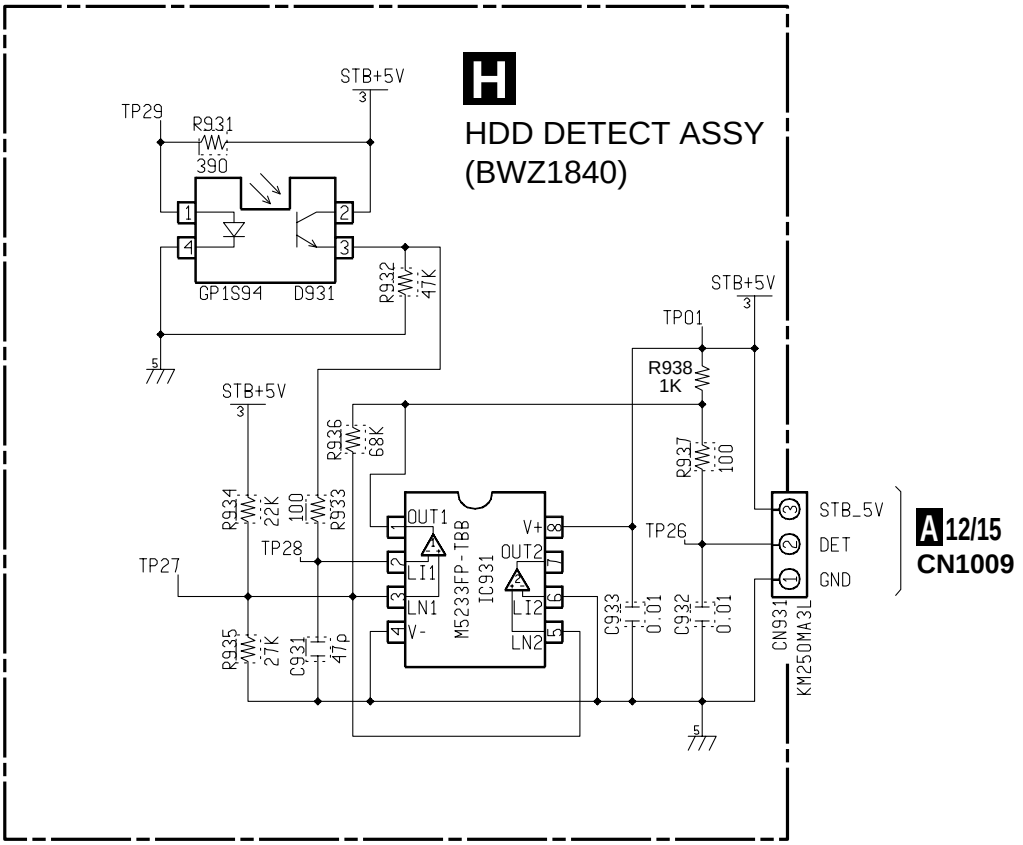
RESISTORS

Indicated in 1/10w 5%
Tolerance unless other with
noted K,Kohm M,Mohm

CAPACITORS

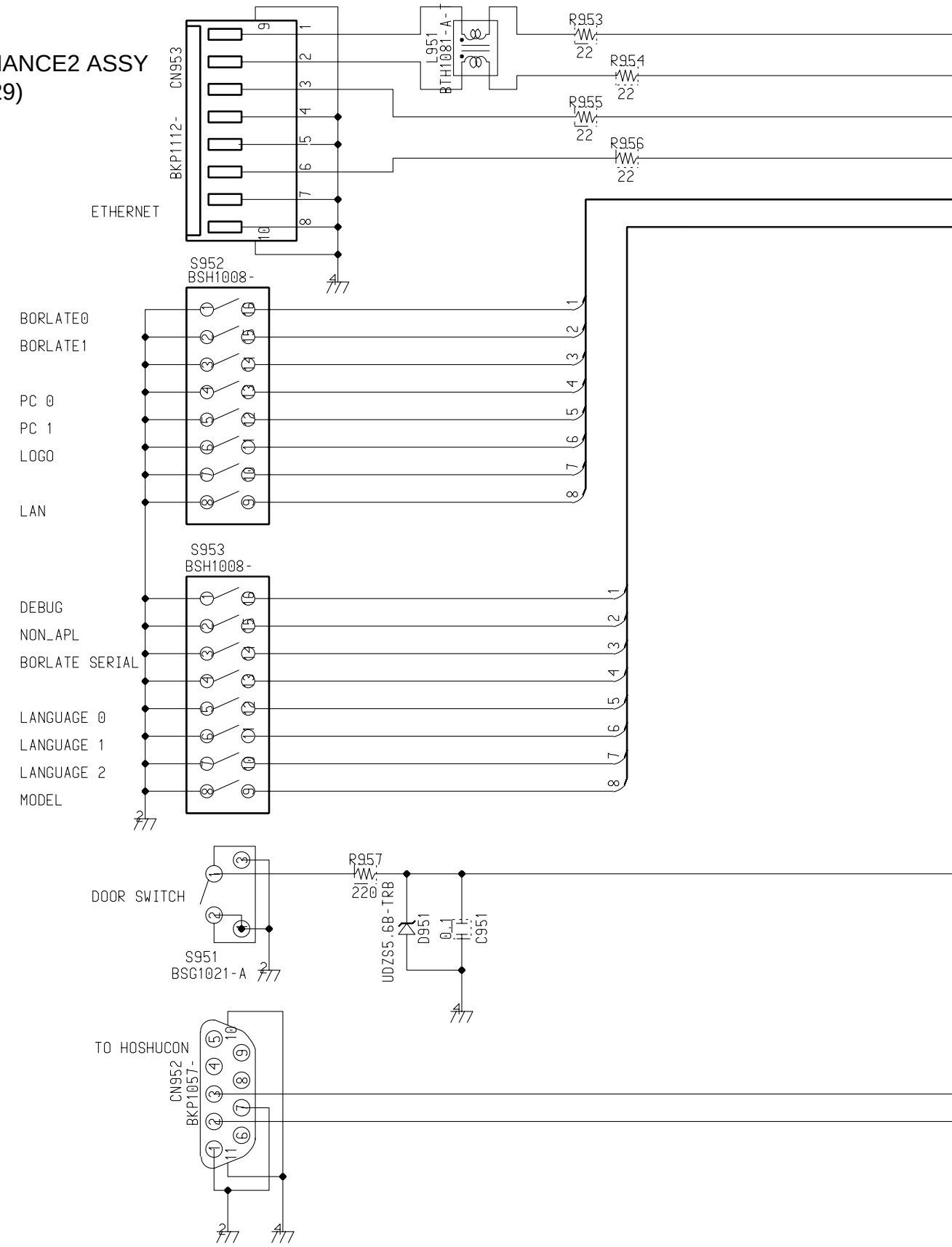
Indicated inCapacity(uF)/Voltage(V)
unless otherwise noted p;pF
Indicate without voltage is 50V
except electrolytic capacitor

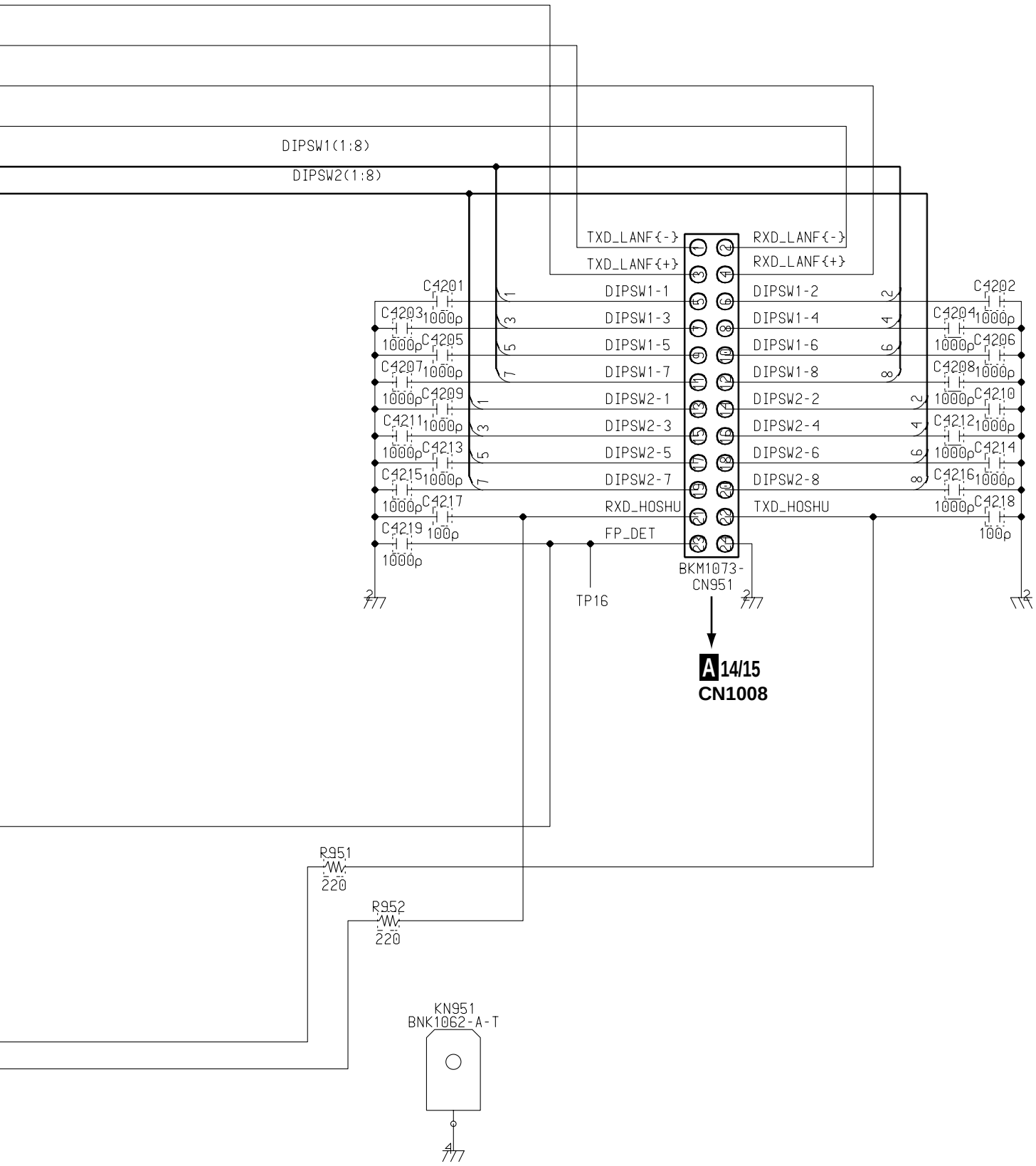




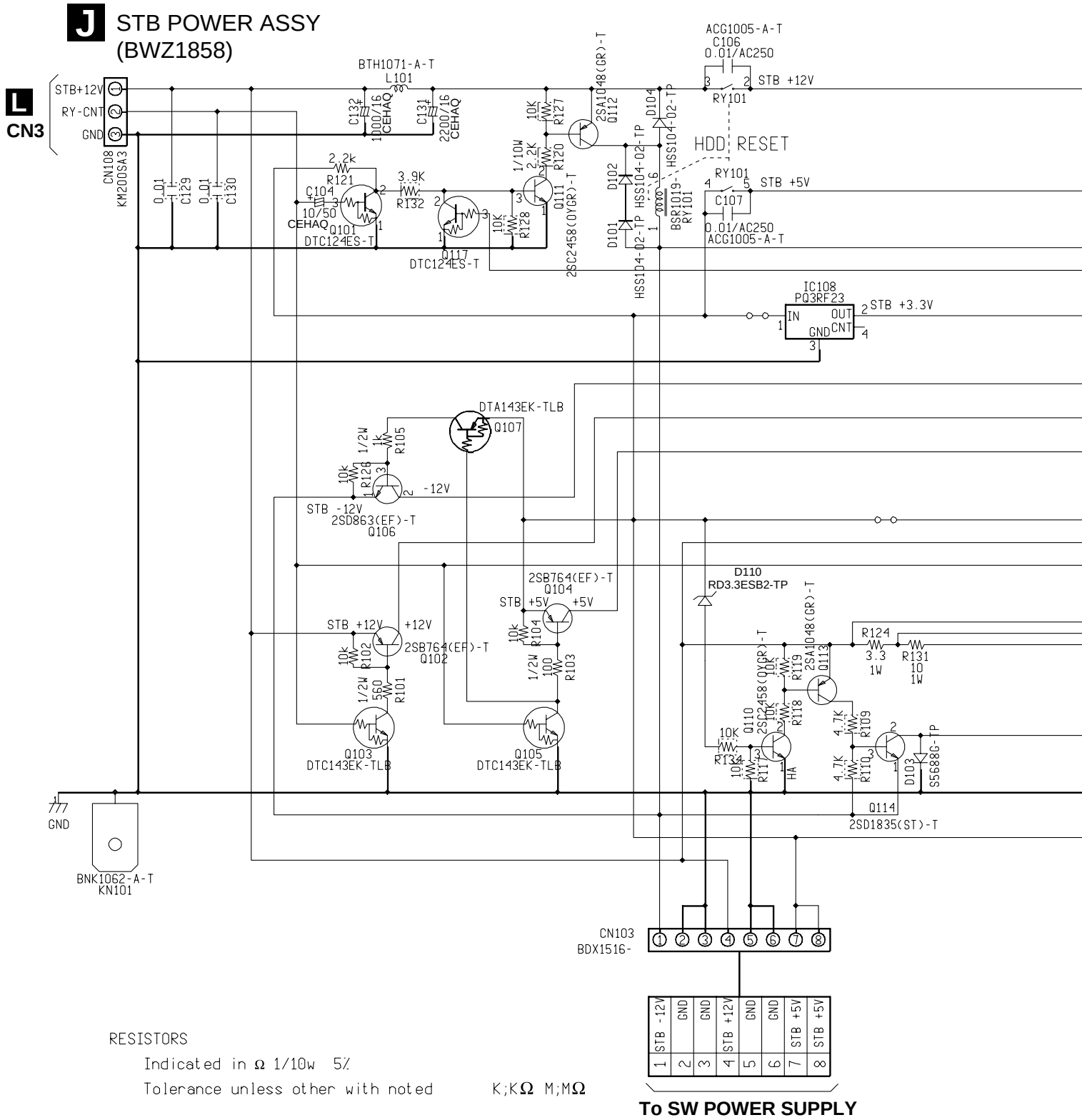
3.32 MENTENANCE2 ASSY

MENTENANCE2 ASSY
(BWZ1829)




DIPSW1(1:8)
DIPSW2(1:8)
TXD_LANF{-}
TXD_LANF{+}
RXD_LANF{-}
RXD_LANF{+}
C4201
C4202
C4203 1000p
C4204 1000p
1000p C4205
1000p C4206
C4207 1000p
C4208 1000p
1000p C4209
1000p C4210
C4211 1000p
C4212 1000p
1000p C4213
1000p C4214
C4215 1000p
C4216 1000p
1000p C4217
1000p C4218
C4219 100p
100p
1000p
DIPSW1-1
DIPSW1-2
DIPSW1-3
DIPSW1-4
DIPSW1-5
DIPSW1-6
DIPSW1-7
DIPSW1-8
DIPSW2-1
DIPSW2-2
DIPSW2-3
DIPSW2-4
DIPSW2-5
DIPSW2-6
DIPSW2-7
DIPSW2-8
RXD_HOSHU
TXD_HOSHU
FP_DET
BKM1073-
CN951
TP16
A 14/15
CN1008
R951
220
R952
220
KN951
BNK1062-A-T

3.33 STB POWER ASSY



RESISTORS

Indicated in Ω 1/10w 5%

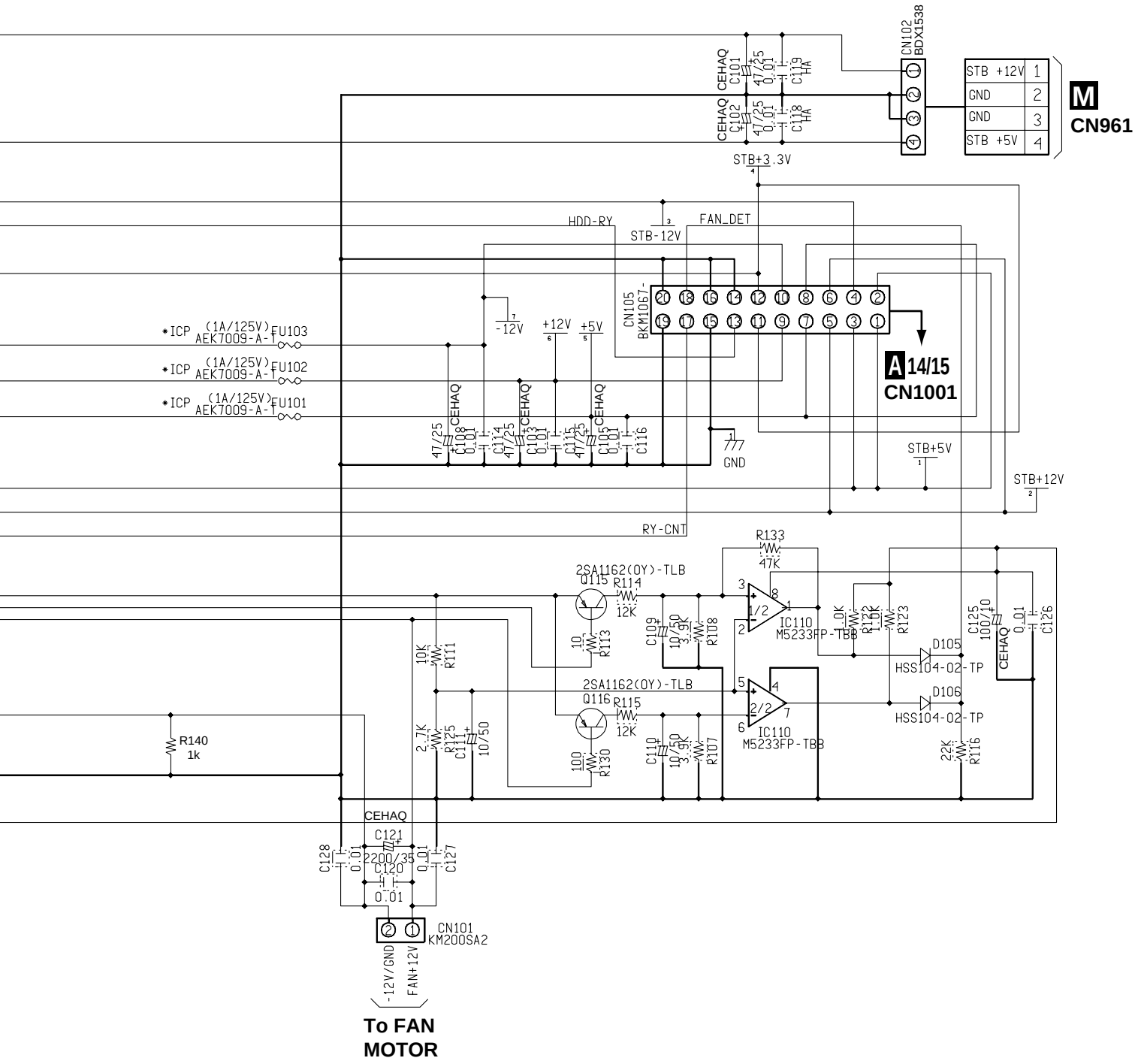
Tolerance unless other with noted K;KΩ M;MΩ

CAPACITORS

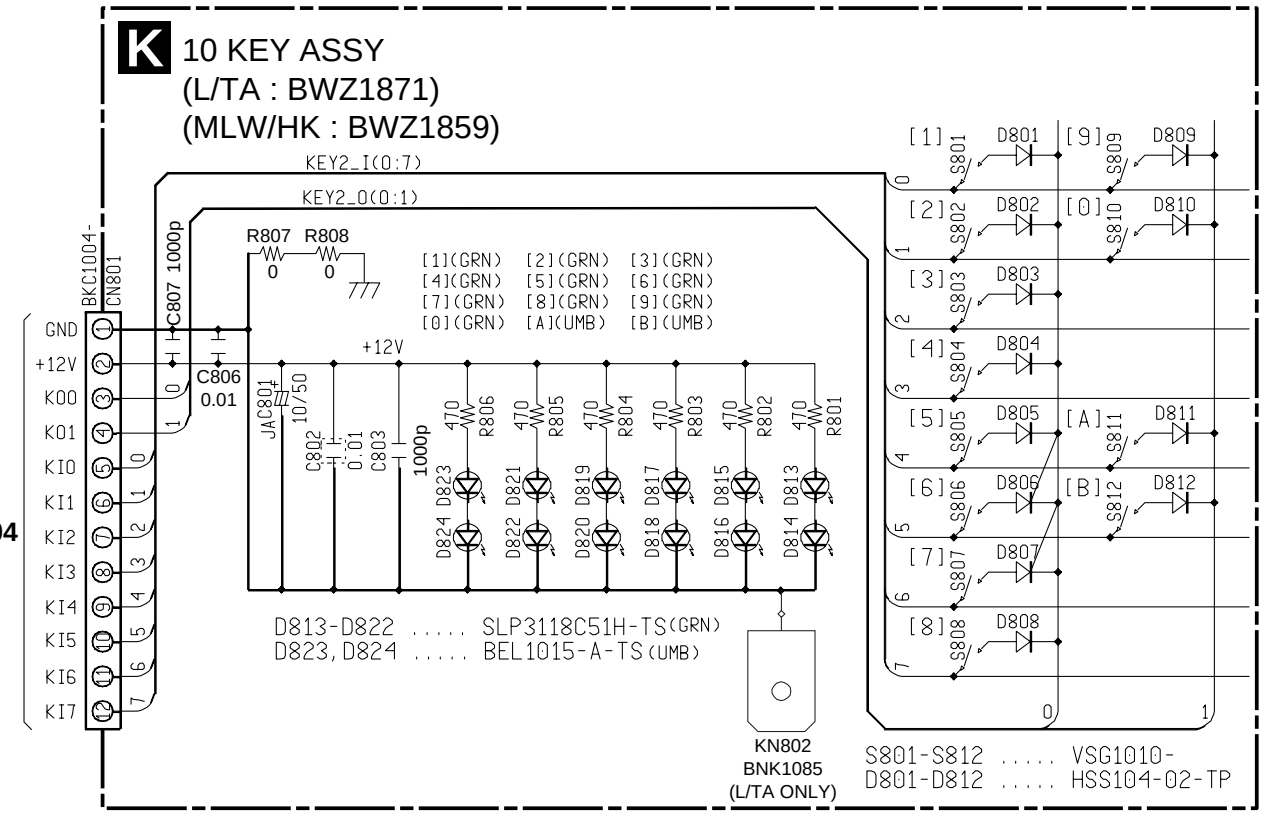
Indicated inCapacity(F)/Voltage(V)

unless otherwise noted p;pF

Indicate without voltage is 50V except electrolytic capacitor


CN102
BDX1538
STB +12V 1
GND 2
GND 3
STB +5V 4
M
CN961
STB+3.3V
HDD-RY
STB-12V
FAN_DET
CN105
BKM1067-
A 14/15
CN1001
*ICP (1A/125V) AEK7009-A-T FU103
*ICP (1A/125V) AEK7009-A-T FU102
*ICP (1A/125V) AEK7009-A-T FU101
-12V
+12V
+5V
GND
STB+5V
STB+12V
RY-CNT
2SA1162(OY)-TLB
Q115
Q116
IC110
M5233FP-TBB
D105
D106
HSS104-02-TP
R140
1k
CEHAQ
CN101
KM200SA2
-12V/GND
FAN+12V
To FAN
MOTOR

3.34 10 KEY ASSY



F 1/3
CN604

RESISTORS

Indicated in 1/10w 5%

Tolerance unless other with noted K;K M;M

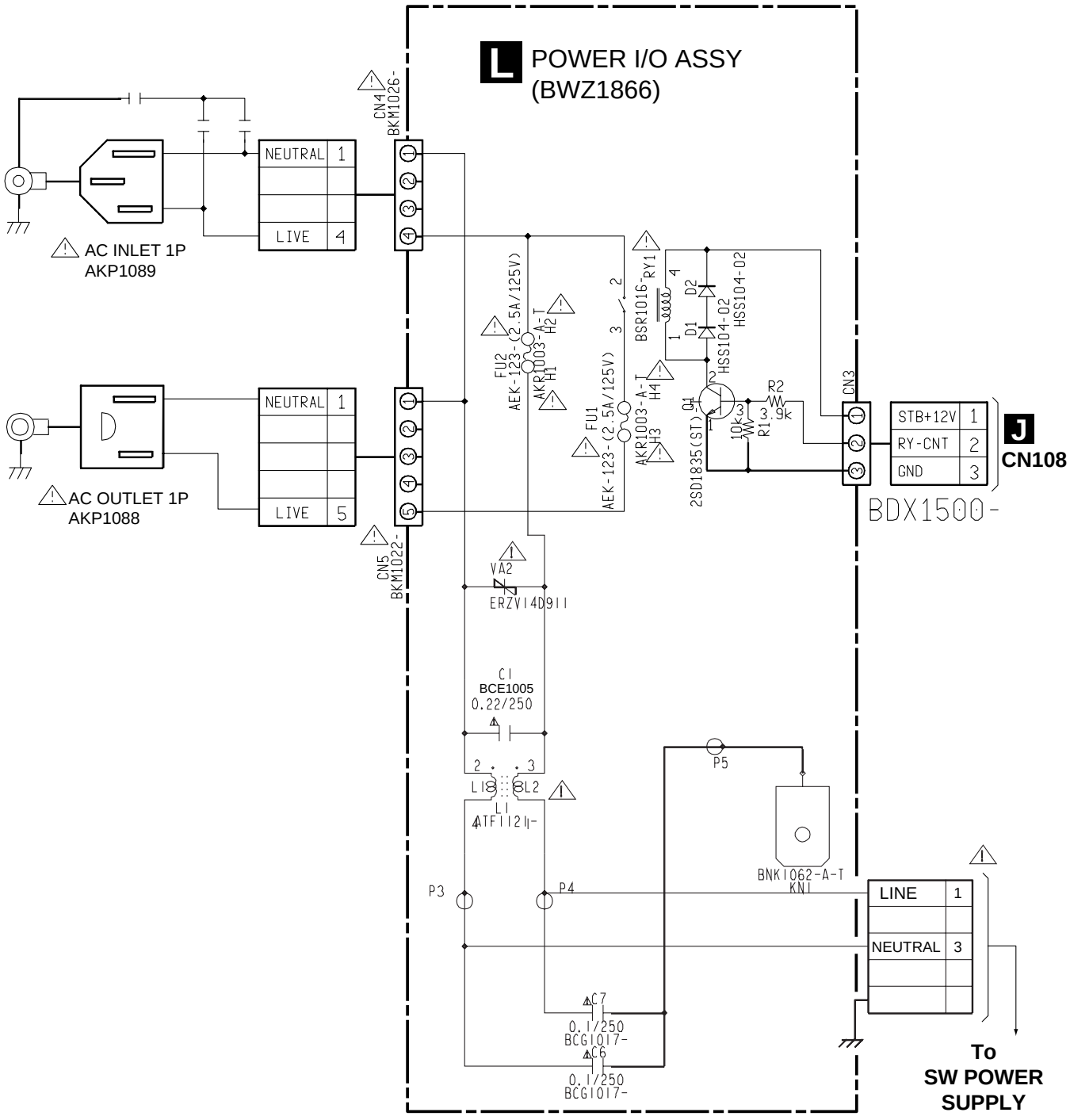
CAPACITORS

Indicated inCapacity(F)/Voltage(V)

unless otherwise noted p;pF

Indicate without voltage is 50V except electrolytic capacitor

3.35 POWER I/O ASSY



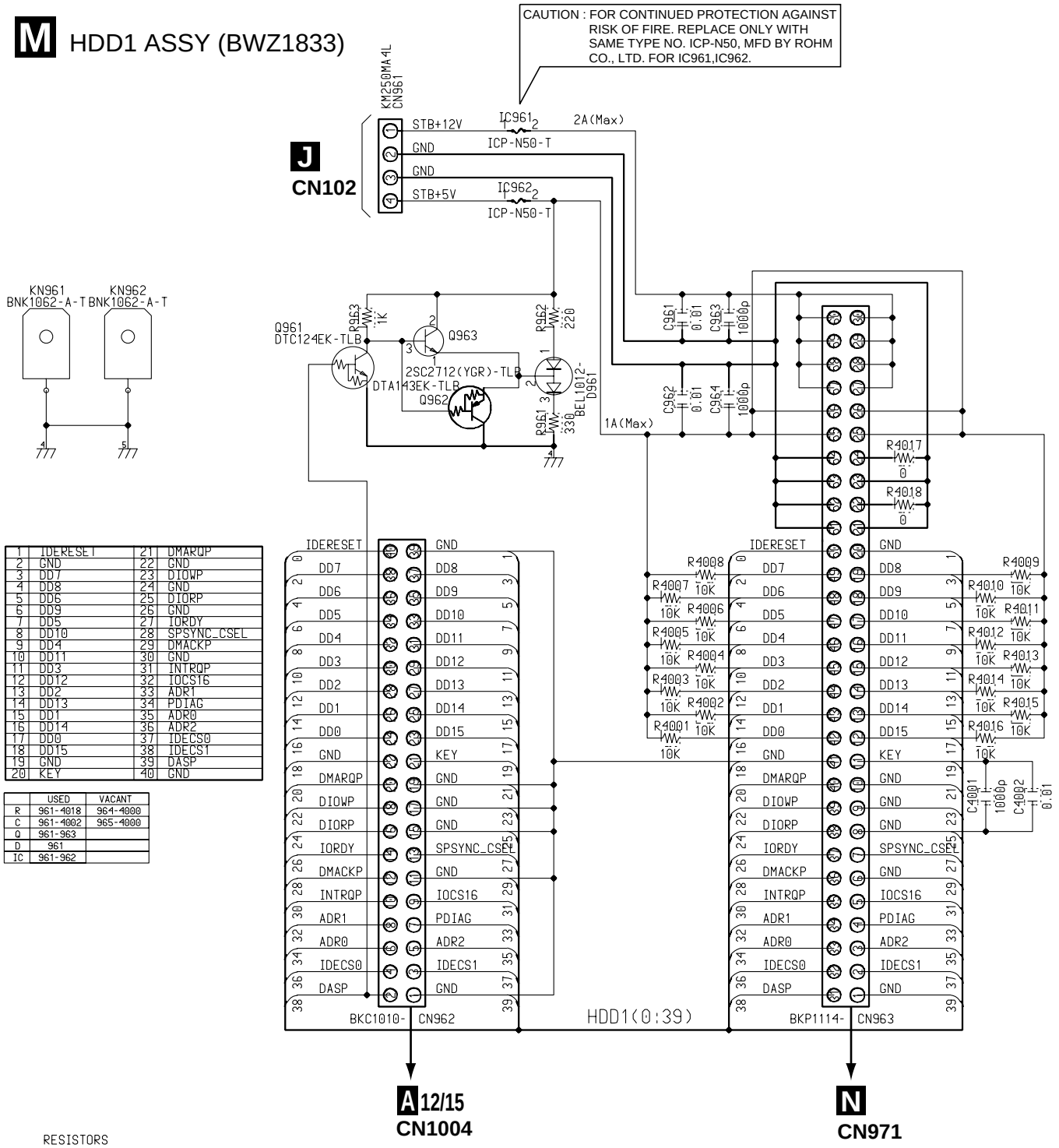
⚠ MARKED PARTS : BE SURE TO USE PARTS OF IDENTICAL DESIGNATION.

• NOTE FOR FUSE REPLACEMENT

CAUTION - FOR CONTINUED PROTECTION AGAINST RISK OF FIRE. REPLACE ONLY WITH SAME TYPE AND RATINGS ONLY.

3.36 HDD1 ASSY

M HDD1 ASSY (BWZ1833)



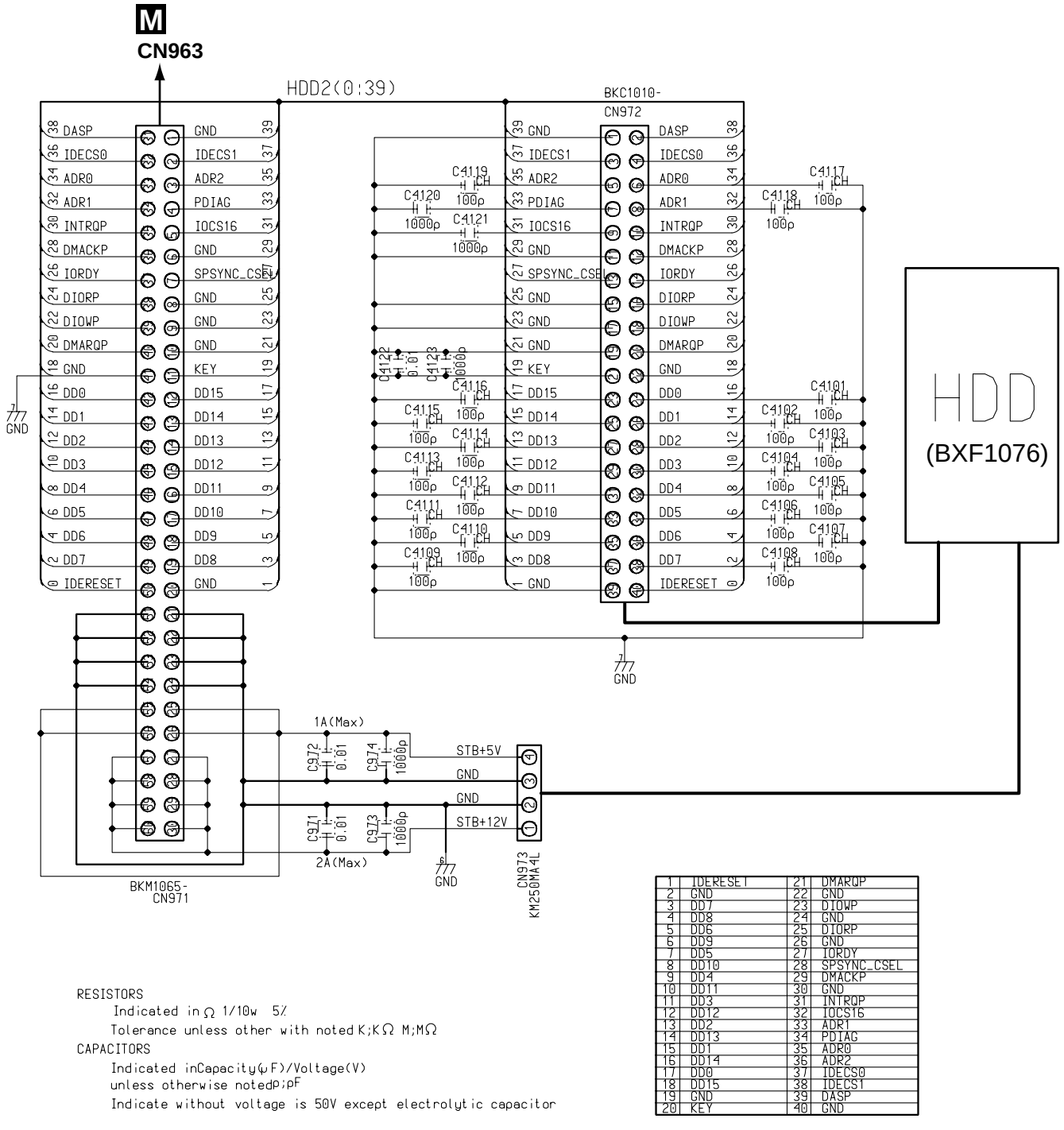
1	IDERESET	21	DMARQP
2	GND	22	GND
3	DD7	23	DIOWP
4	DD8	24	GND
5	DD6	25	DIORP
6	DD9	26	GND
7	DD5	27	IORDY
8	DD10	28	SPSYNC_CSEL
9	DD4	29	DMACKP
10	DD11	30	GND
11	DD3	31	INTRQP
12	DD12	32	IOCS16
13	DD2	33	ADR1
14	DD13	34	PDIAG
15	DD1	35	ADR0
16	DD14	36	ADR2
17	DD0	37	IDECS0
18	DD15	38	IDECS1
19	GND	39	DASP
20	KEY	40	GND

	USED	VACANT
R	961-4018	964-4000
C	961-4002	965-4000
Q	961-963	
D	961	
IC	961-962	

RESISTORS
Indicated in Ω 1/10w 5%
Tolerance unless other with noted K;KΩ M;MΩ
CAPACITORS
Indicated inCapacity(μF)/Voltage(V)
unless otherwise notedp;pF
Indicate without voltage is 50V except electrolytic capacitor

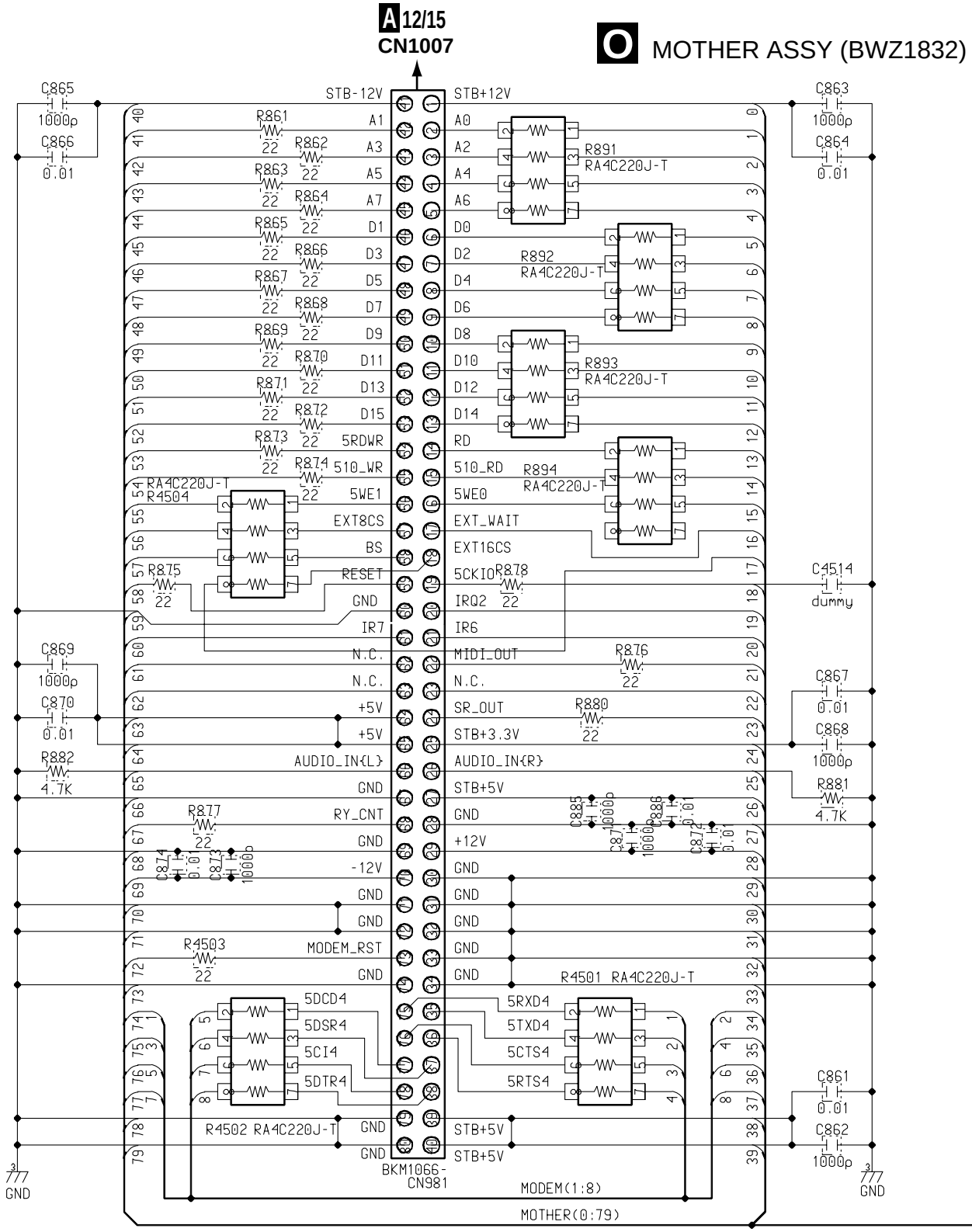
3.37 HDD2 ASSY

N HDD2 ASSY (BWZ1834)

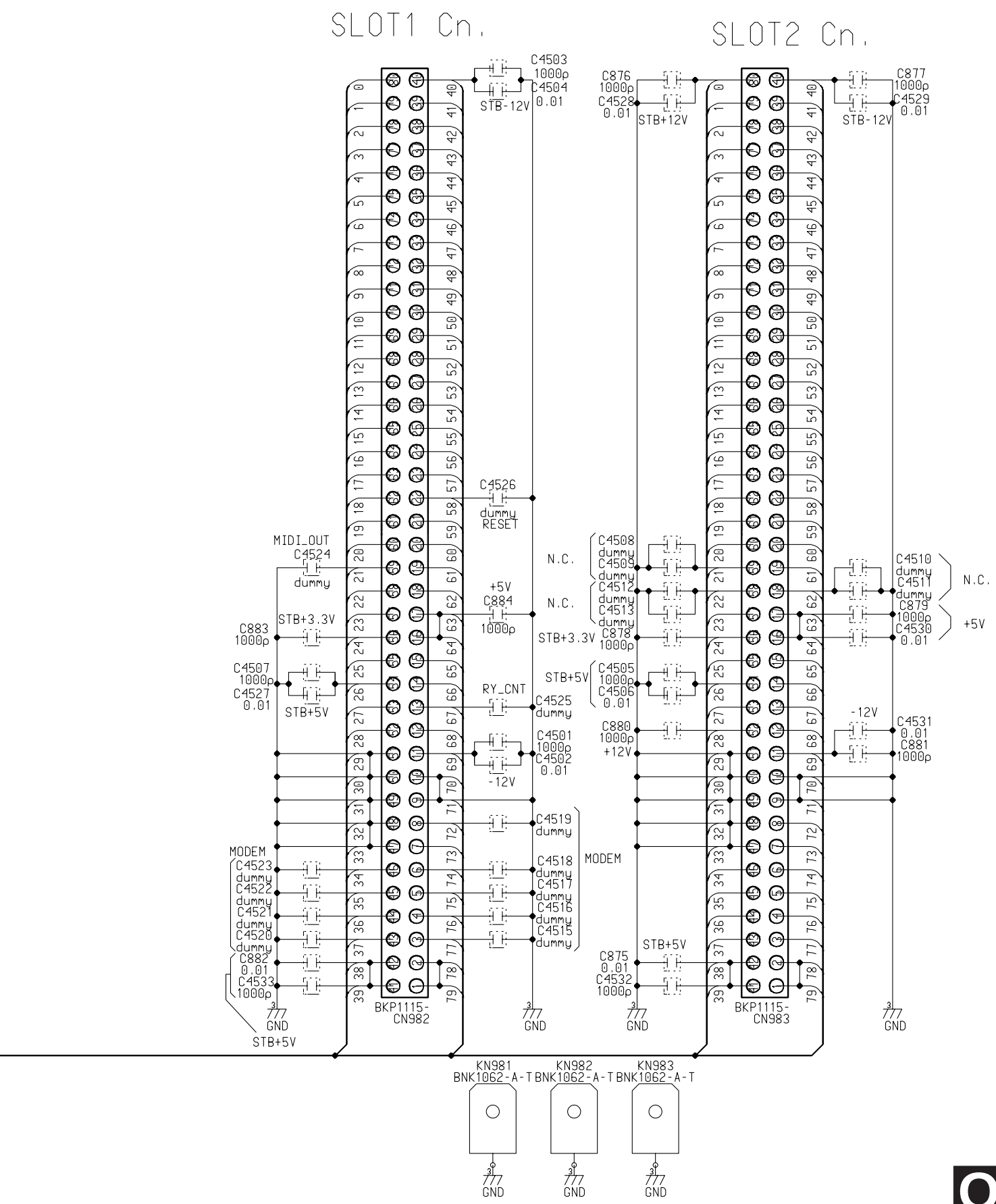


1	IDERESET	21	DMARQP
2	GND	22	GND
3	DD7	23	DIOWP
4	DD8	24	GND
5	DD6	25	DIORP
6	DD9	26	GND
7	DD5	27	IORDY
8	DD10	28	SPSYNC_CSEL
9	DD4	29	DMACKP
10	DD11	30	GND
11	DD3	31	INTRQP
12	DD12	32	IOCS16
13	DD2	33	ADR1
14	DD13	34	PDIAG
15	DD1	35	ADR0
16	DD14	36	ADR2
17	DD0	37	IDECS0
18	DD15	38	IDECS1
19	GND	39	DASP
20	KEY	40	GND

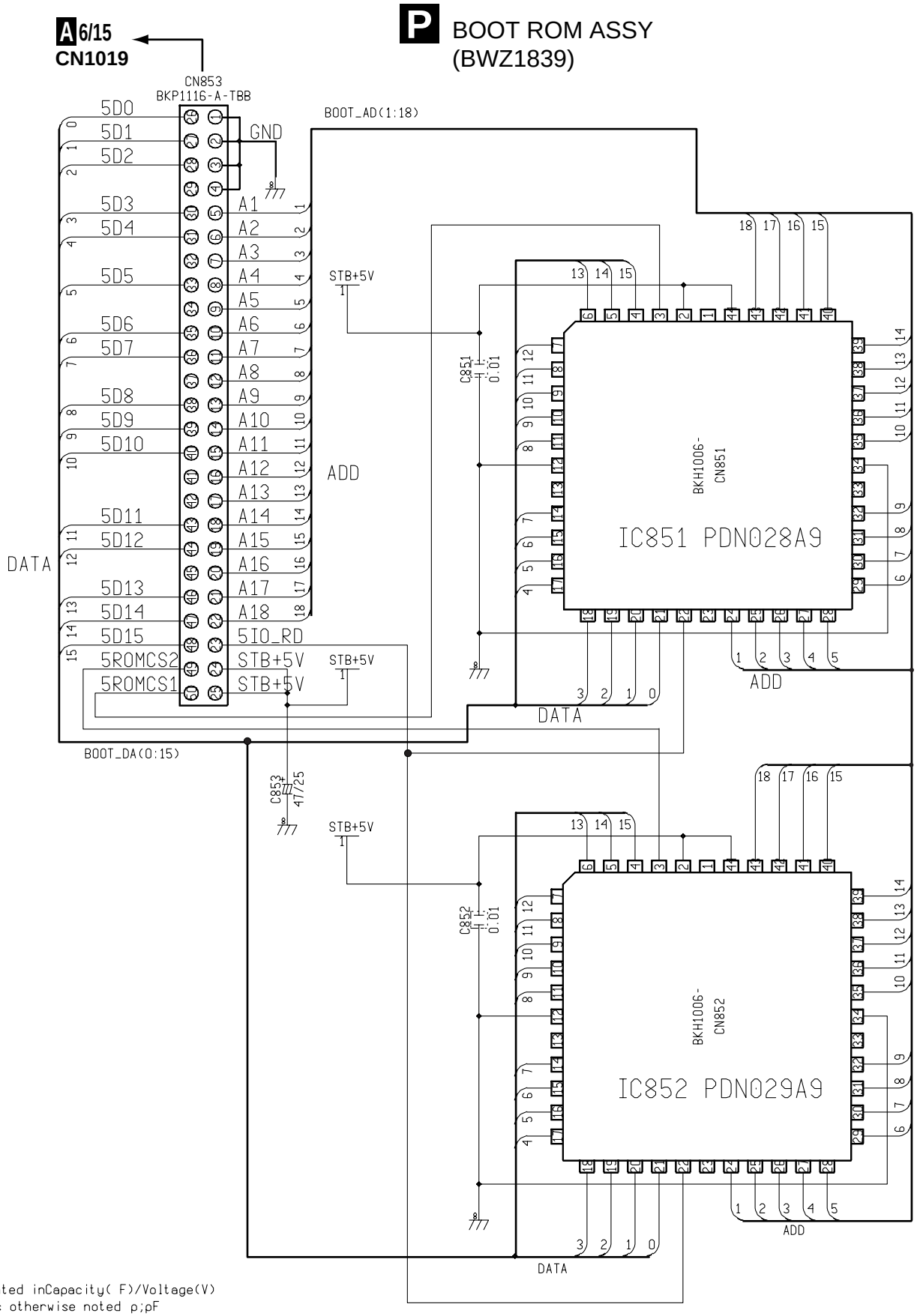
3.38 MOTHER ASSY



RESISTORS
Indicated in Ω 1/10w 5%
Tolerance unless other with noted K;KΩ M;MΩ
CAPACITORS
Indicated inCapacity(μF)/Voltage(V)
unless otherwise notedp;pF
Indicate without voltage is 50V except electrolytic capacitor


SLOT1 Cn.
SLOT2 Cn.
C4503 1000p
C4504 0.01
STB-12V
C876 1000p
C4528 0.01
STB+12V
C877 1000p
C4529 0.01
STB-12V
C4526 dummy
RESET
MIDI_OUT
C4524 dummy
+5V
C884 1000p
N.C.
C883 1000p
STB+3.3V
C4507 1000p
C4527 0.01
STB+5V
RY_CNT
C4525 dummy
C4501 1000p
C4502 0.01
-12V
C4519 dummy
C4518 dummy
C4517 dummy
C4516 dummy
C4515 dummy
MODEM
C4523 dummy
C4522 dummy
C4521 dummy
C4520 dummy
C882 0.01
C4533 1000p
GND
STB+5V
BKP1115-CN982
GND
C4508 dummy
C4509 dummy
C4512 dummy
C4513 dummy
C878 1000p
C4505 1000p
C4506 0.01
C880 1000p
+12V
C875 0.01
C4532 1000p
STB+5V
BKP1115-CN983
GND
C4510 dummy
C4511 dummy
N.C.
C879 1000p
C4530 0.01
+5V
-12V
C4531 0.01
C881 1000p
GND
KN981 BNK1062-A-T
KN982 BNK1062-A-T
KN983 BNK1062-A-T
GND
GND
GND

3.39 BOOT ROM ASSY [MLW/HK TYPE (S/N No. 1 - 100) ONLY]

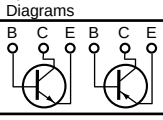
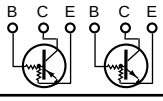
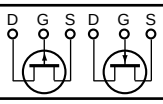
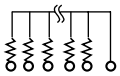


CAPACITORS
Indicated inCapacity(F)/Voltage(V)
unless otherwise noted p;pF
Indicate without voltage is 50V except electrolytic capacitor

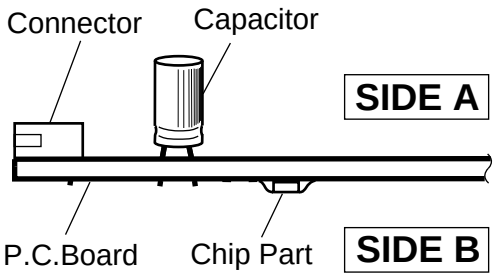
4. PCB CONNECTION DIAGRAM

NOTE FOR PCB DIAGRAMS :

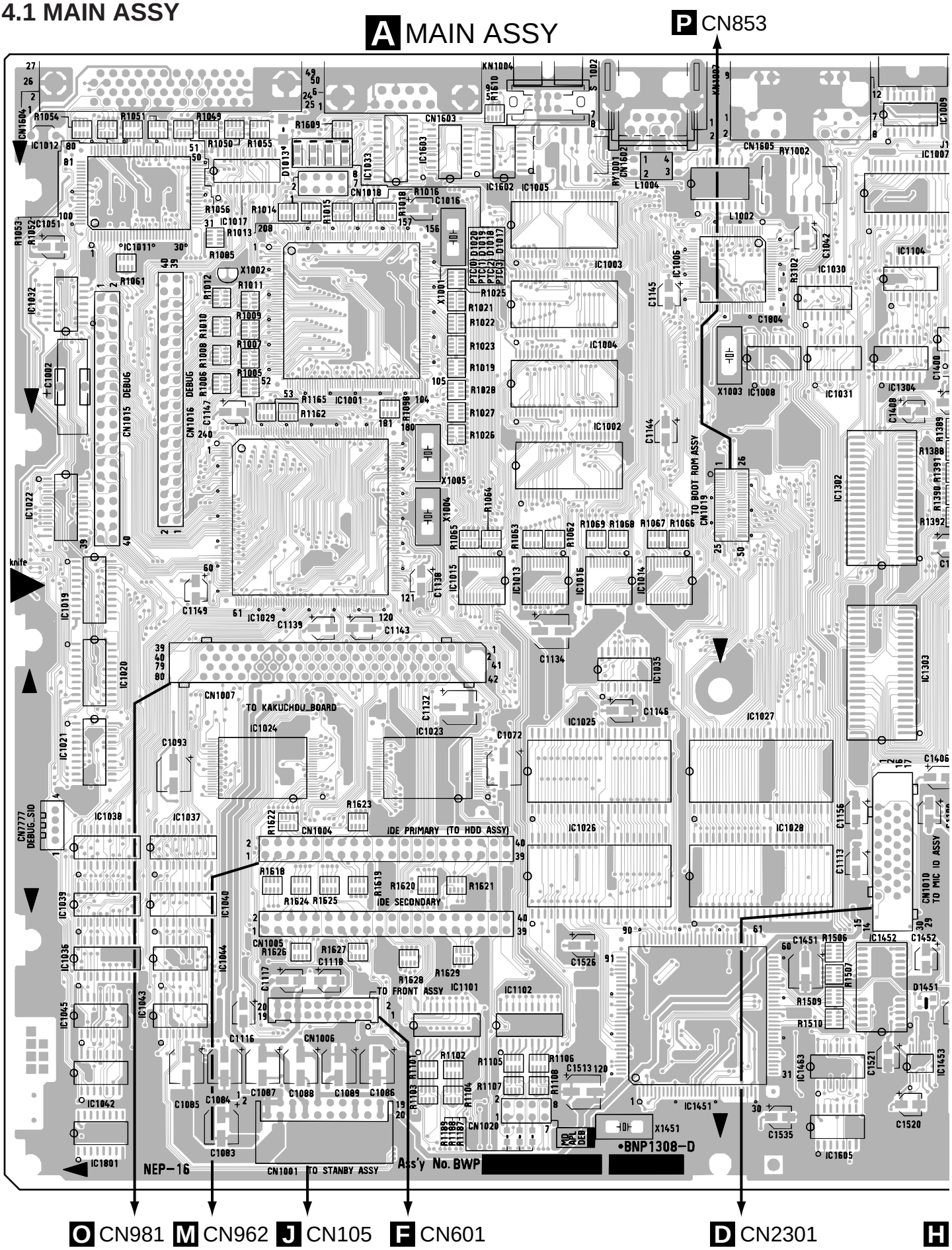
1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

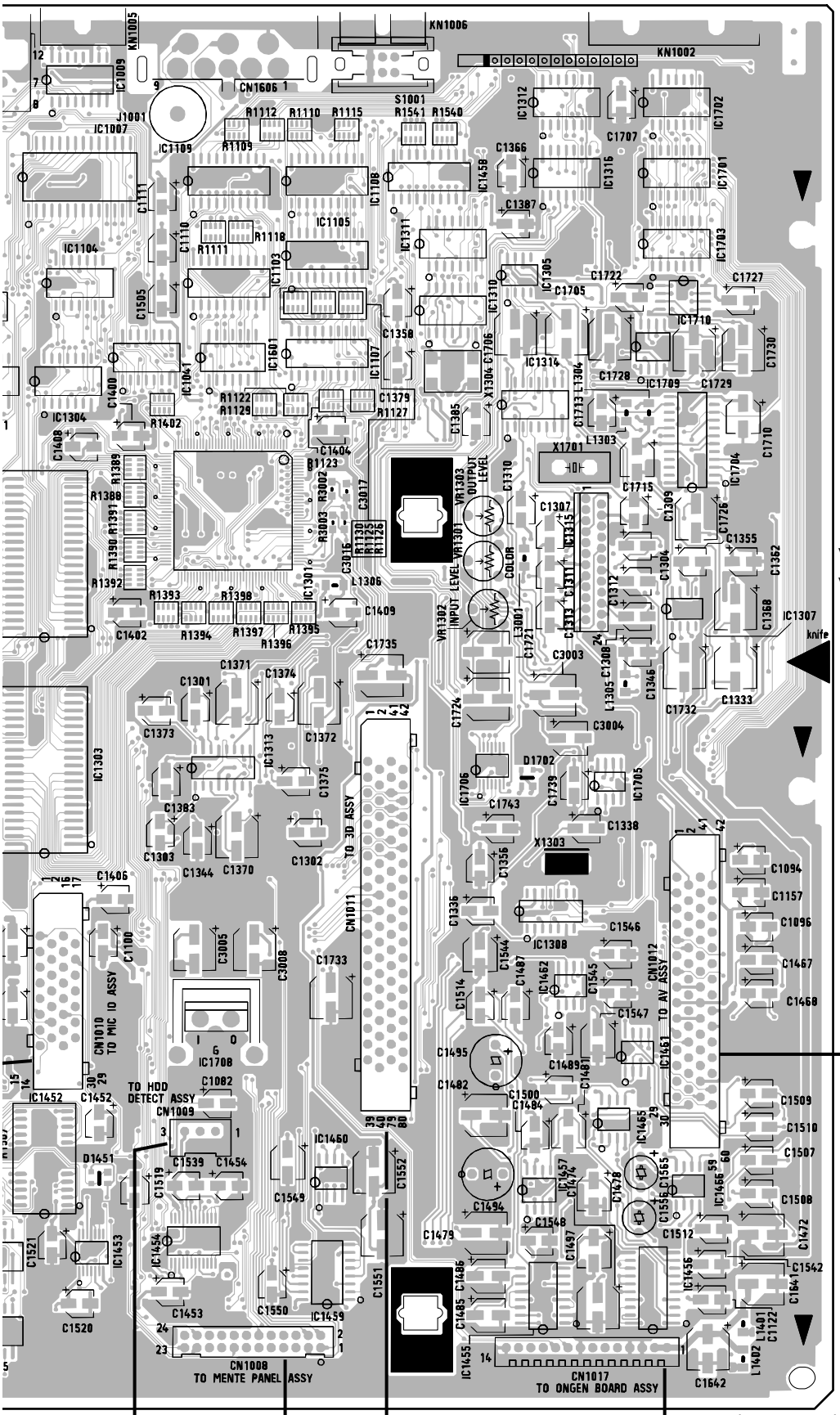
Symbol In PCB Diagrams	Symbol In Schematic Diagrams	Part Name
		Transistor
		Transistor with resistor
		Field effect transistor
		Resistor array
		3-terminal regulator

3. The parts mounted on this PCB include all necessary parts for several destinations.
   For further information for respective destinations, be sure to check with the schematic diagram.
4. View point of PCB diagrams.



4.1 MAIN ASSY


A MAIN ASSY
P CN853
TO KAKUCHOU_BOARD
IDE PRIMARY (TO HDD ASSY)
IDE SECONDARY
TO FRONT ASSY
TO BOOT ROM ASSY
TO MIC IO ASSY
CN1001 TO STANBY ASSY
Ass'y No. BWP
•BNP1308-D
NEP-16
O CN981
M CN962
J CN105
F CN601
D CN2301

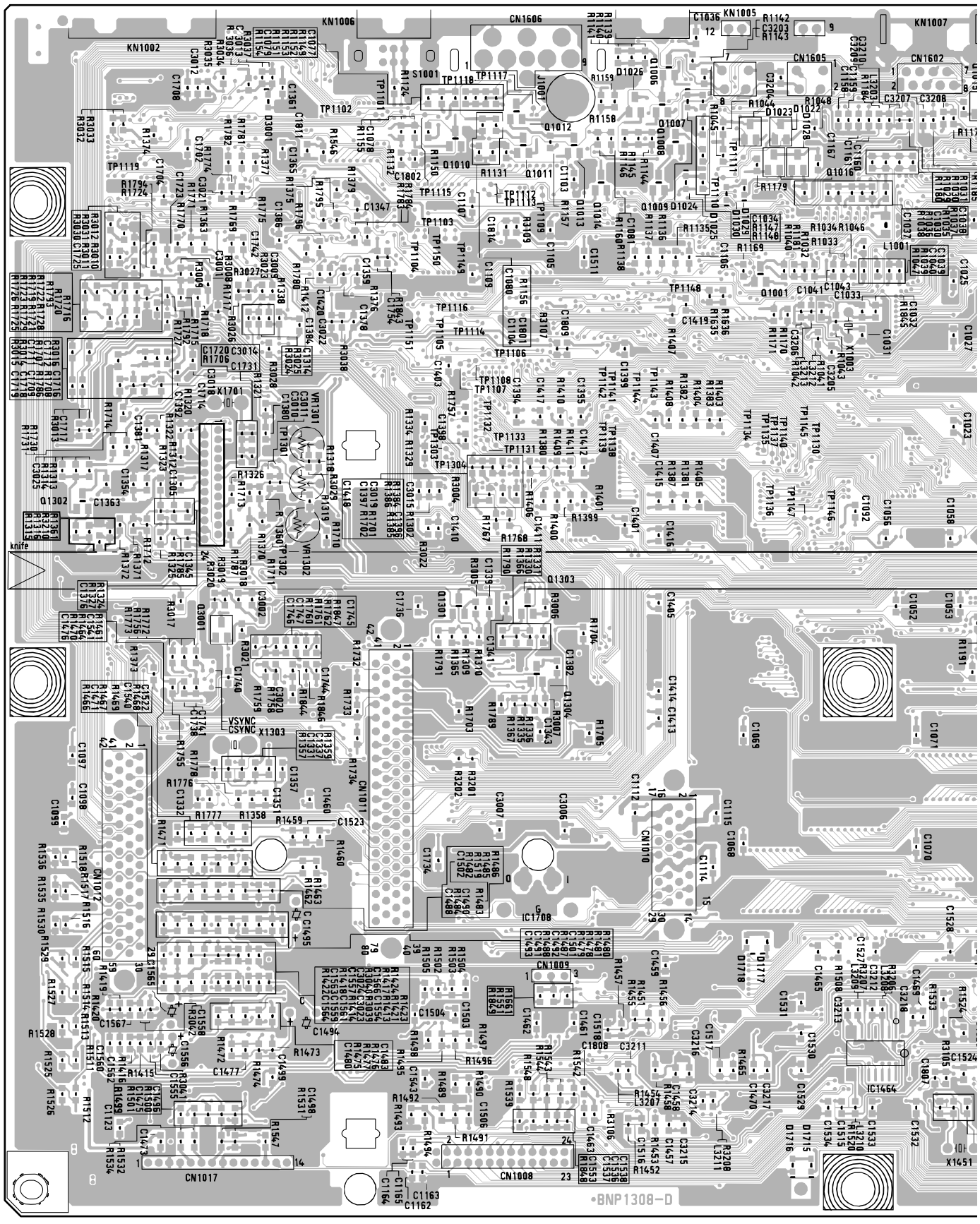


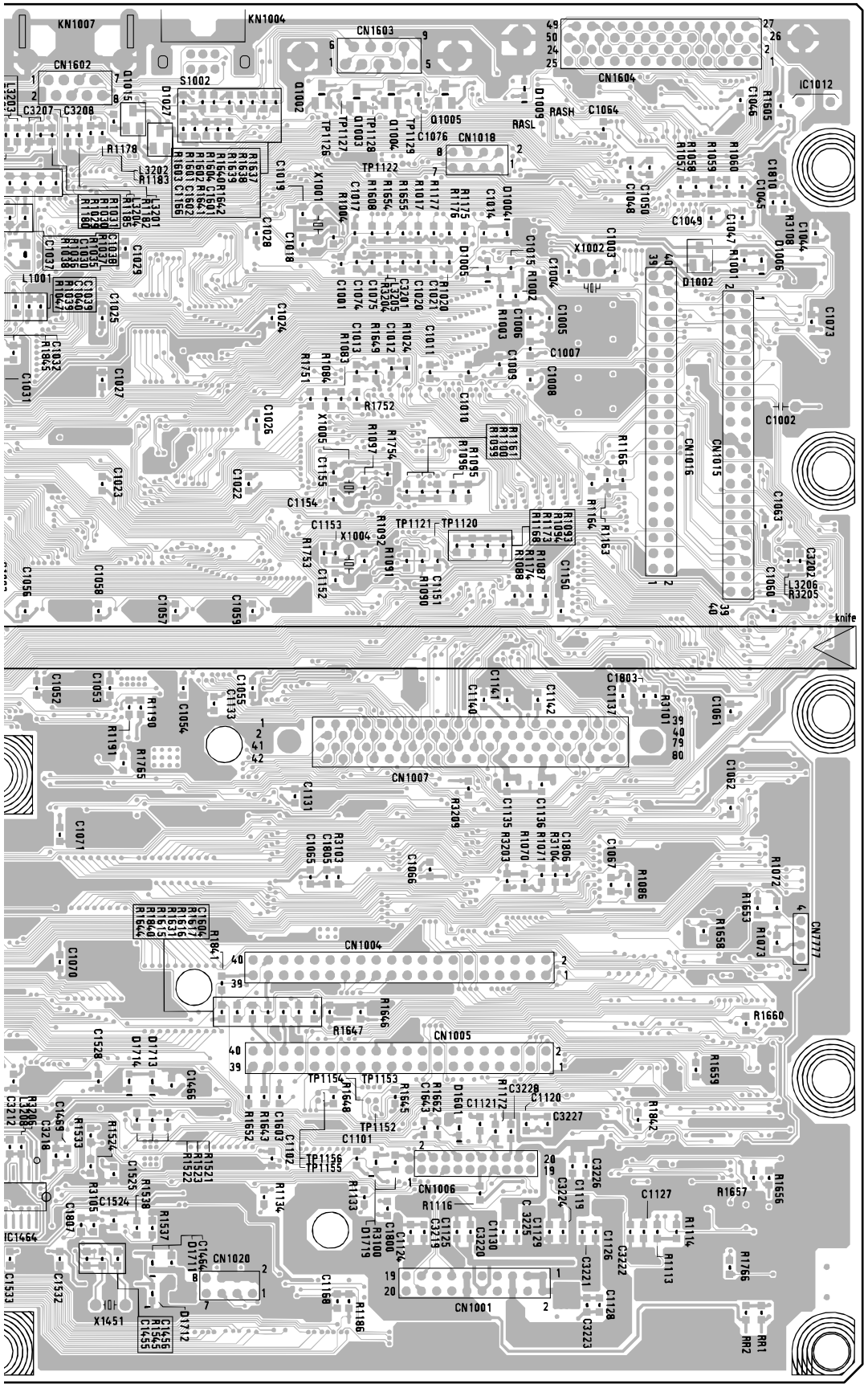
(BNP1308-D)

H CN931 **I** CN951 **B** CN1201 MIDI SOUND GENERATE MODULE **C** CN201

SIDE A

A MAIN ASSY


KN1002
KN1006
CN1606
KN1005
KN1007
CN1605
CN1602
S1001
J1001
Q1012
Q1026
Q1006
Q1007
Q1008
Q1009
Q1010
Q1011
Q1016
Q1024
Q1001
D1023
D1022
D1028
D1025
D1030
D1031
TP1118
TP1117
TP1102
TP1119
TP1115
TP1112
TP1113
TP1103
TP1104
TP1150
TP1149
TP1116
TP1114
TP1105
TP1106
TP1148
TP1108
TP1107
TP1133
TP1131
TP1304
TP1132
TP1134
TP1135
TP1136
TP1137
TP1140
TP1141
TP1142
TP1143
TP1144
TP1145
TP1146
TP1147
TP1139
TP1138
TP1130
TP1151
TP1302
TP1303
TP1301
X1701
X1303
X1003
L1001
VR1301
VR1302
knife
VSYNC
CSYNC
IC1708
IC1464
CN1017
CN1008
CN1009
CN1010
CN1011
CN1012
•BNP1308-D



(BNP1308-D)

Q1010	Q1006	Q1005
Q1011		
Q1013	Q1007	
Q1014	Q1009	
	Q1016	
	Q1001	
Q1302		
Q3001	Q1301	Q1303

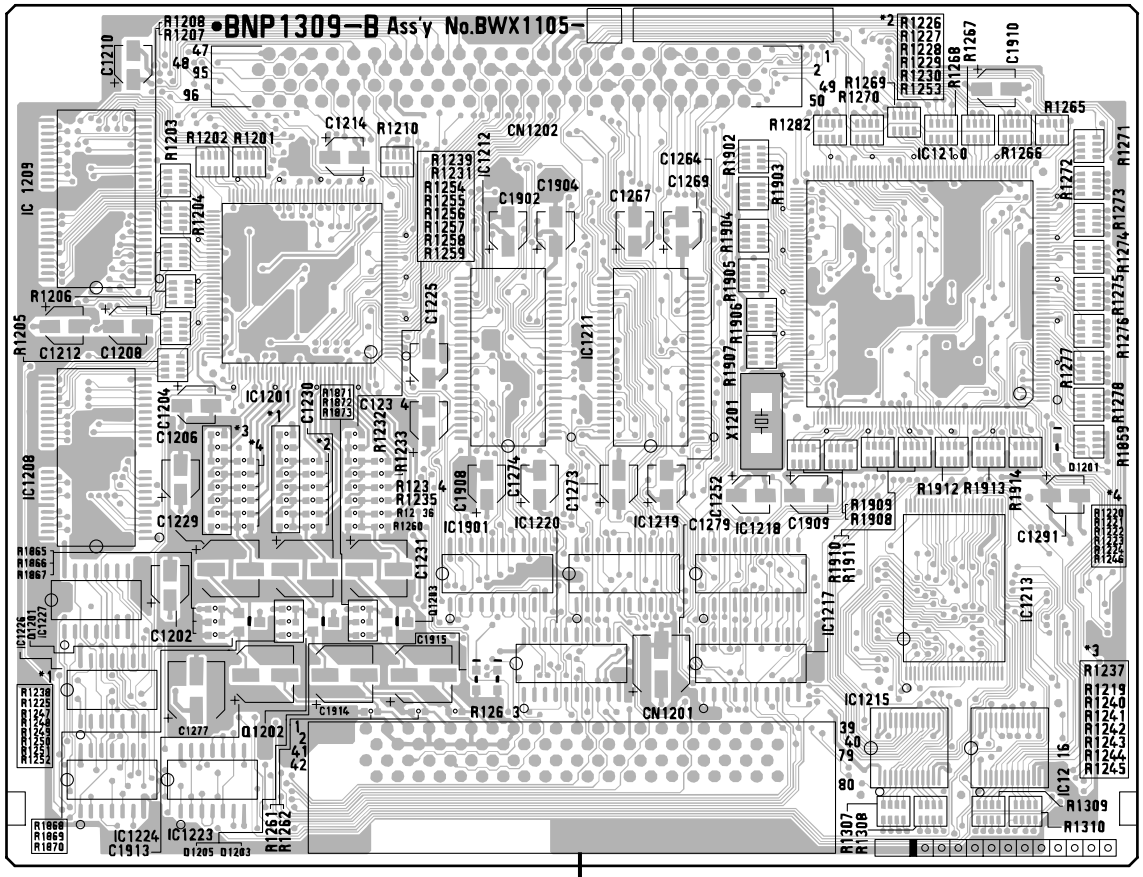
SIDE B

4.2 3D ASSY

A

B 3D ASSY

IC1208 IC1209 IC1201 IC1212 IC1211 IC1210
IC1226 IC1227 Q1202 Q1203 IC1901 IC1220 IC1219 IC1218 IC1213
IC1224 IC1223 IC1217 IC1215 IC1216



(BNP1309-B)

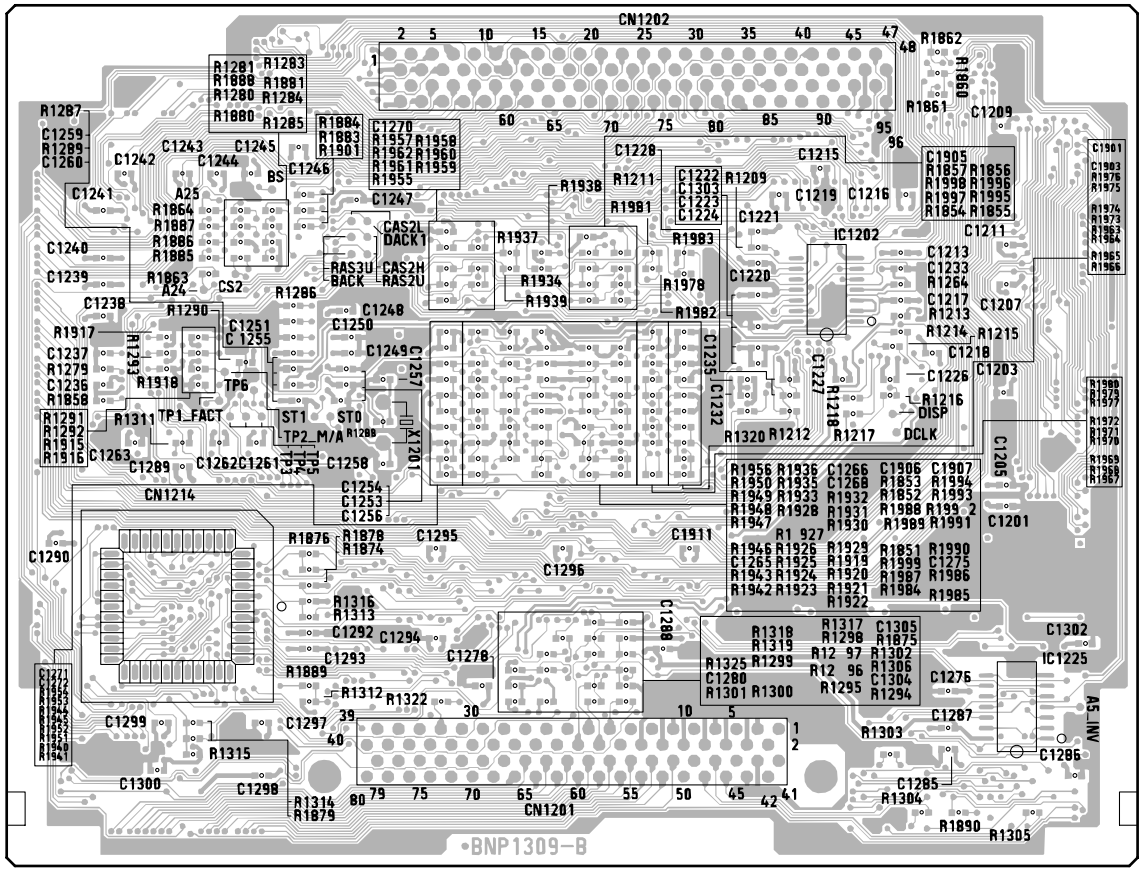
B

A CN1011

SIDE A

D

B 3D ASSY

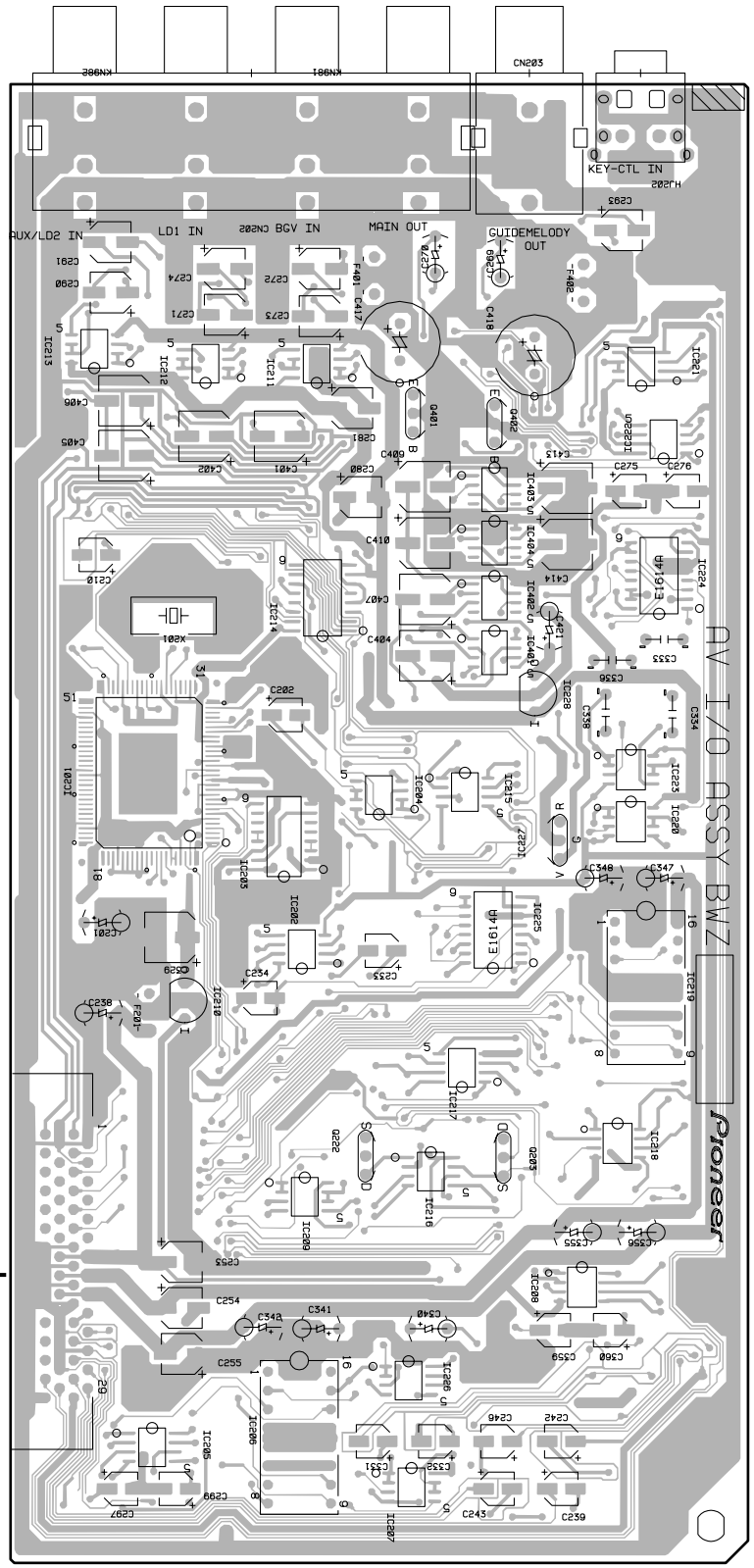


(BNP1309-B)

SIDE B

4.3 AV I/O ASSY

C AV I/O ASSY



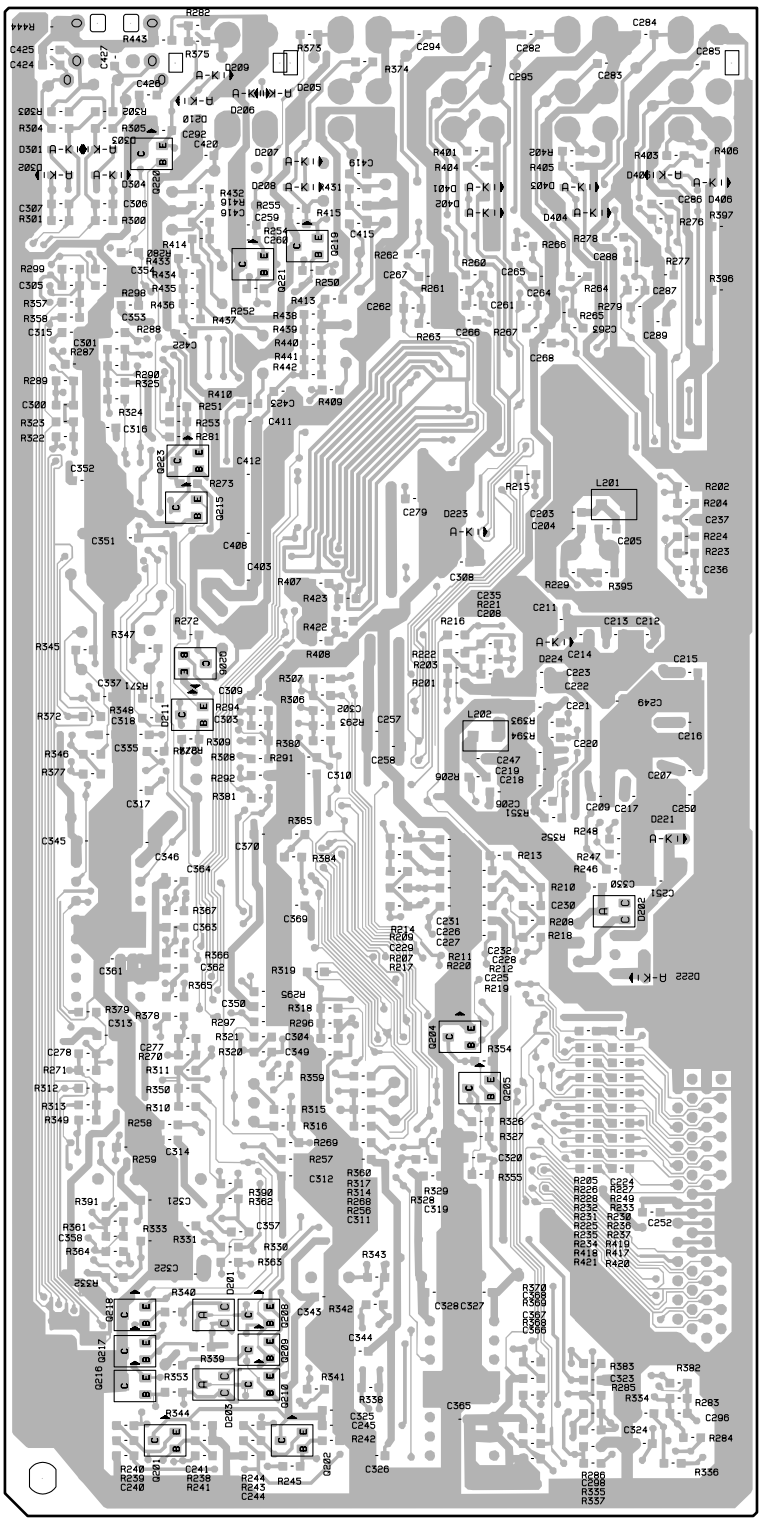
IC211 — IC213
IC221
Q401
Q402
IC222
IC401 — IC404
IC224
IC214
IC228
IC201 — IC203
IC204
IC215
IC223
IC220
IC227
IC225
IC210
IC219
IC216 — IC218
Q222
IC209
Q203
IC208
IC205 — IC207
IC226

A
CN1012

(BNP1306-D)

SIDE A

C AV I/O ASSY



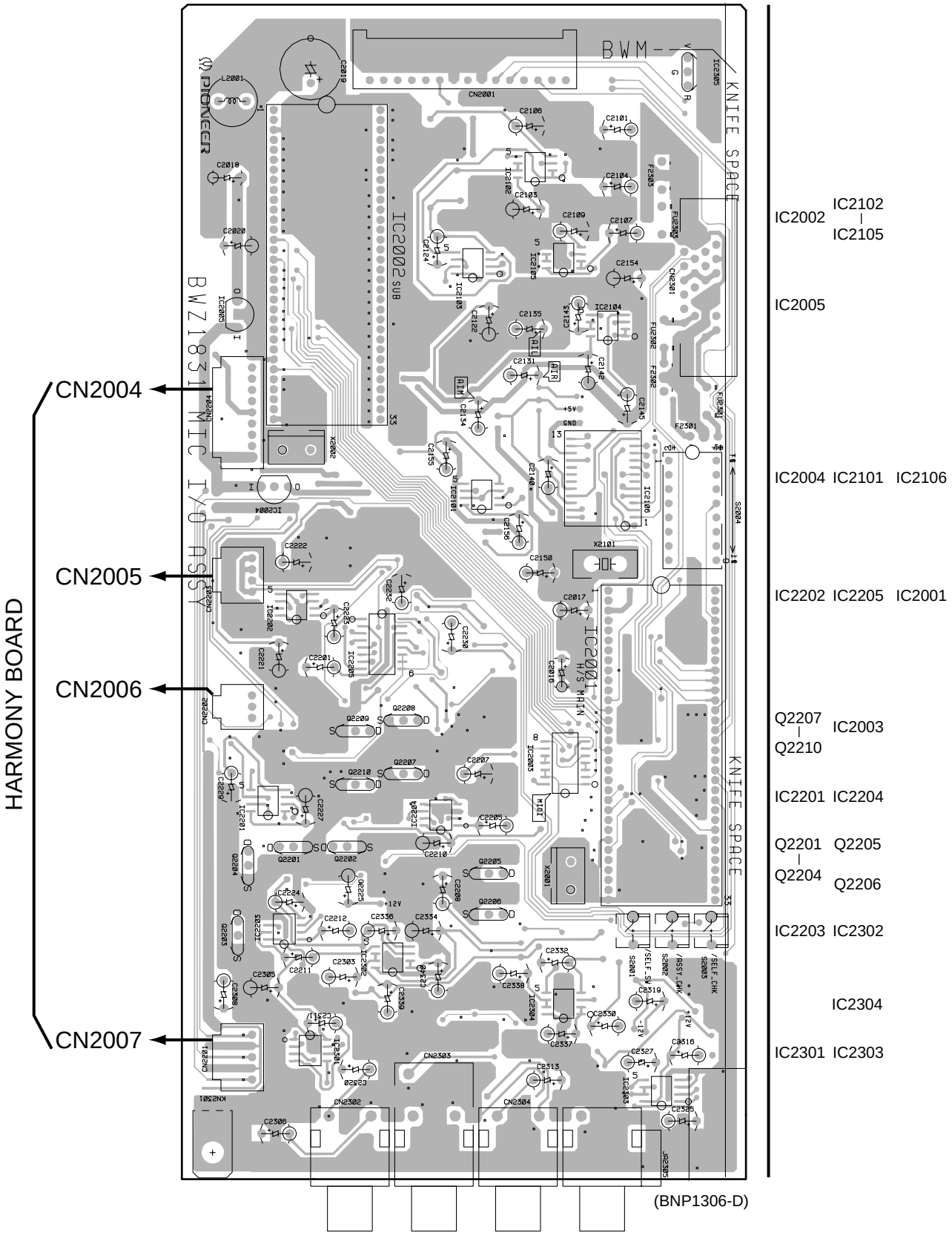
Q220
Q221
Q219
Q223
Q215
Q211
Q206
Q204
Q205
Q216 Q208
Q218 Q210
Q201 Q202

(BNP1306-D)

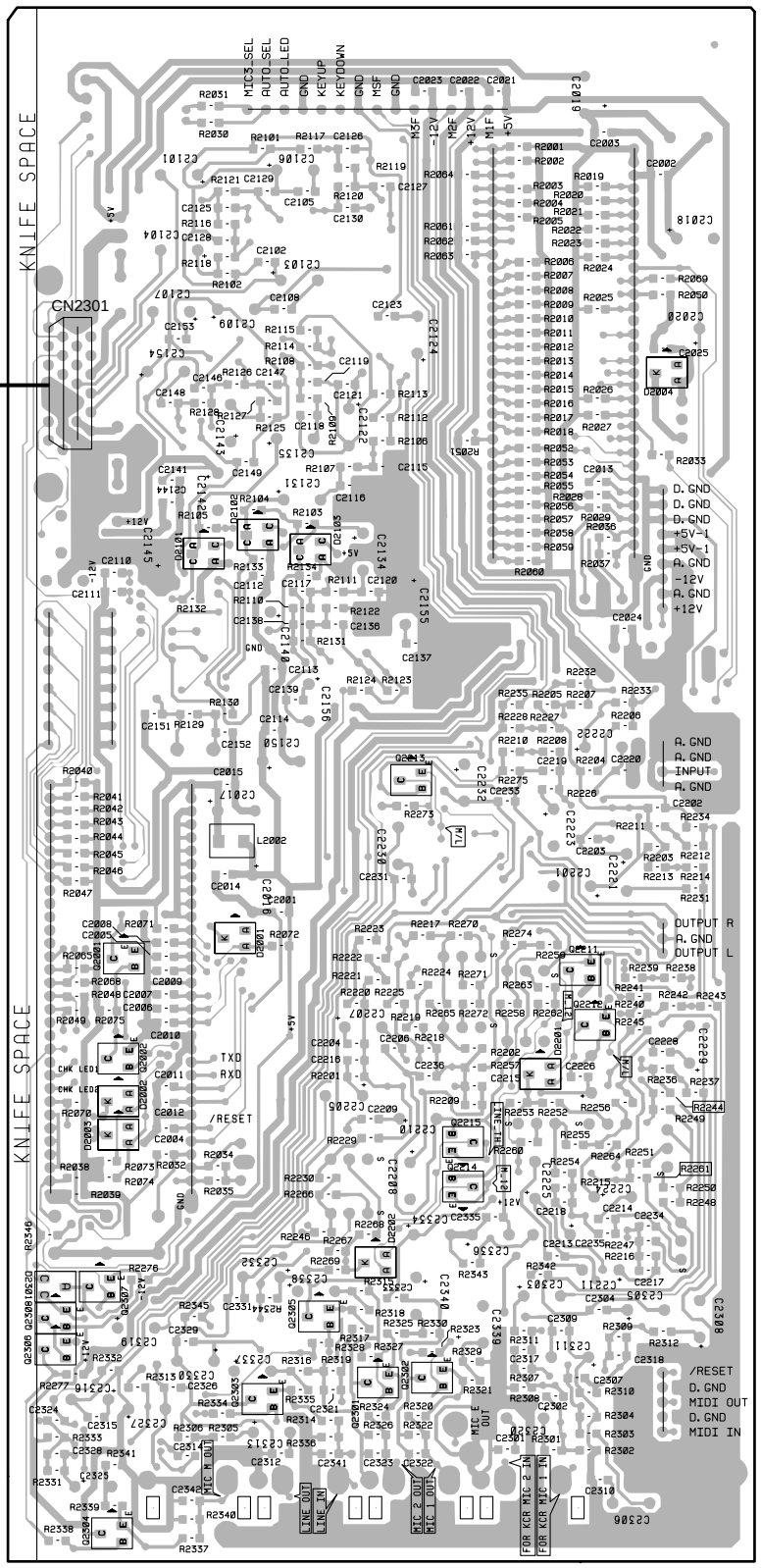
SIDE B

4.4 MIC I/O ASSY

D MIC I/O ASSY



D MIC I/O ASSY



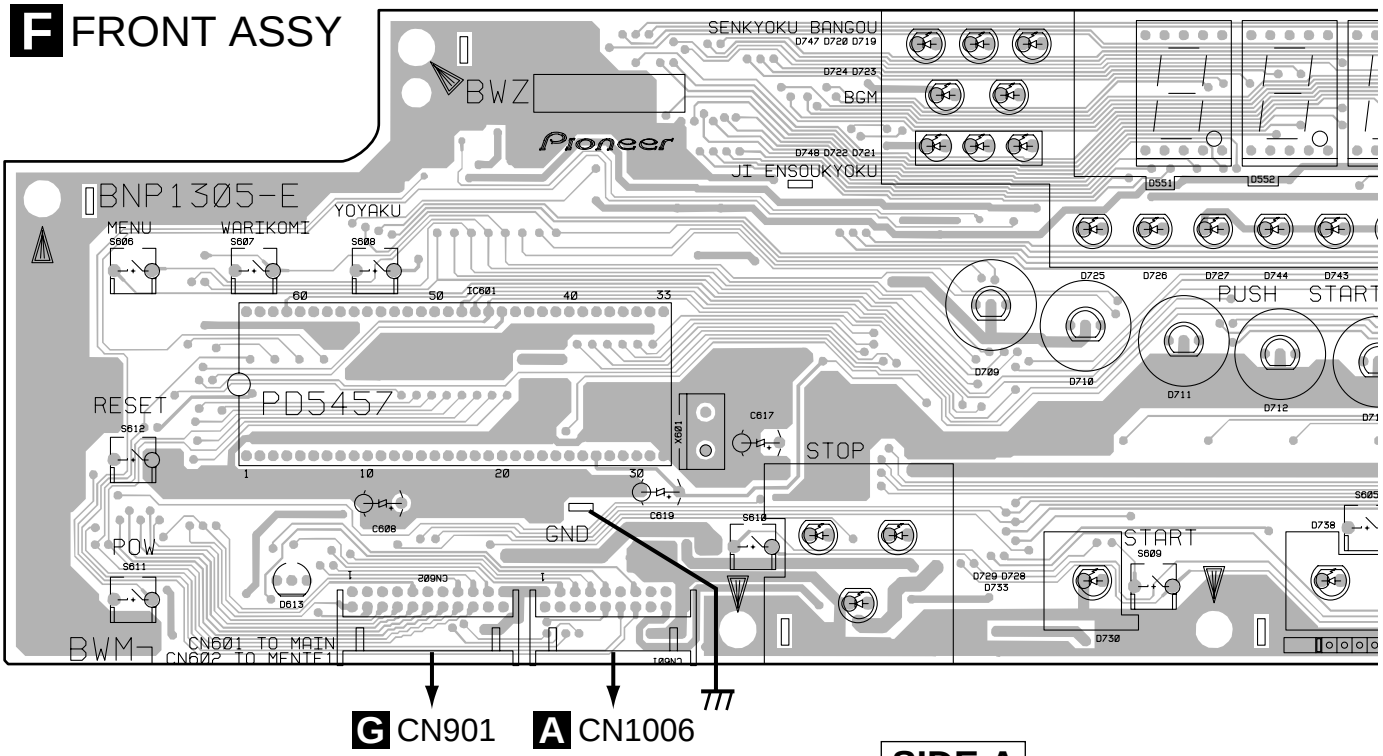
Q2213
Q2001 Q2211 Q2212
Q2002
Q2215
Q2214
Q2306 Q2305
Q2308 Q2301
Q2303
Q2304

(BNP1306-D)

SIDE B

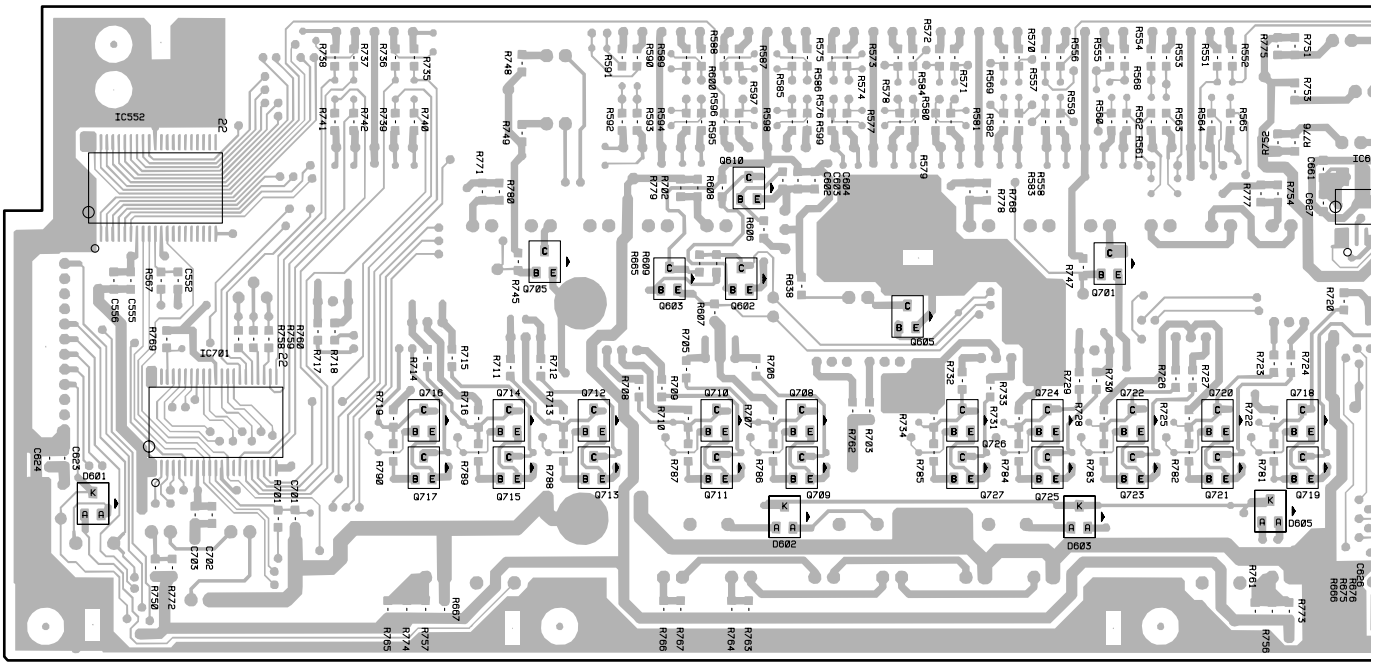
4.5 FRONT ASSY

F FRONT ASSY

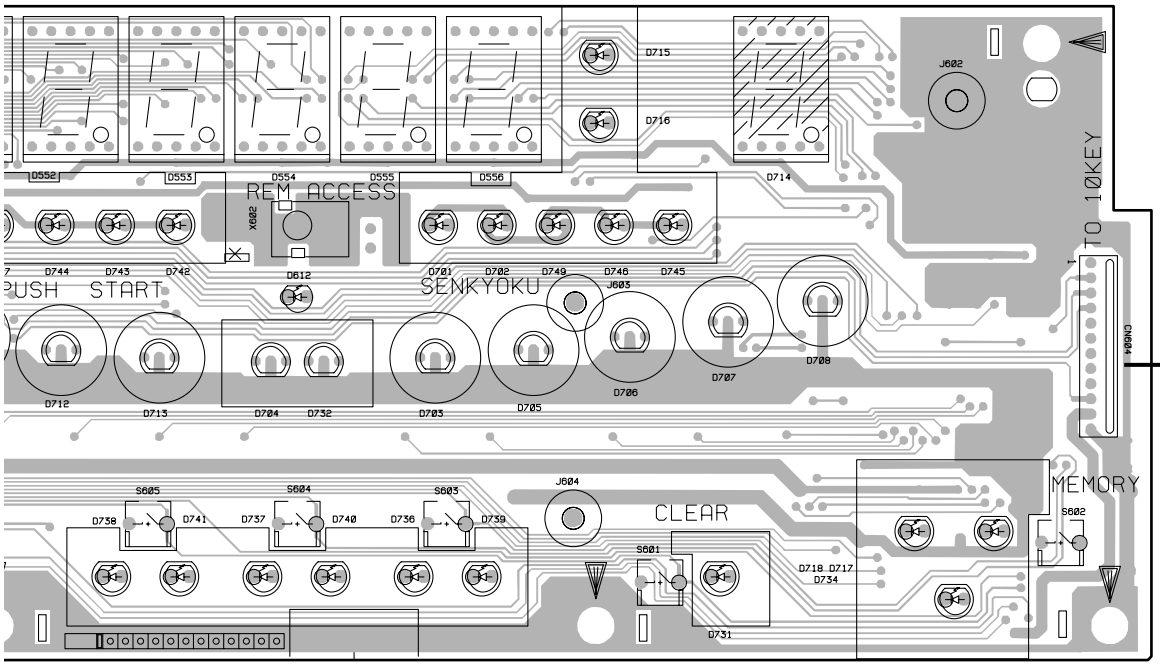


SIDE A

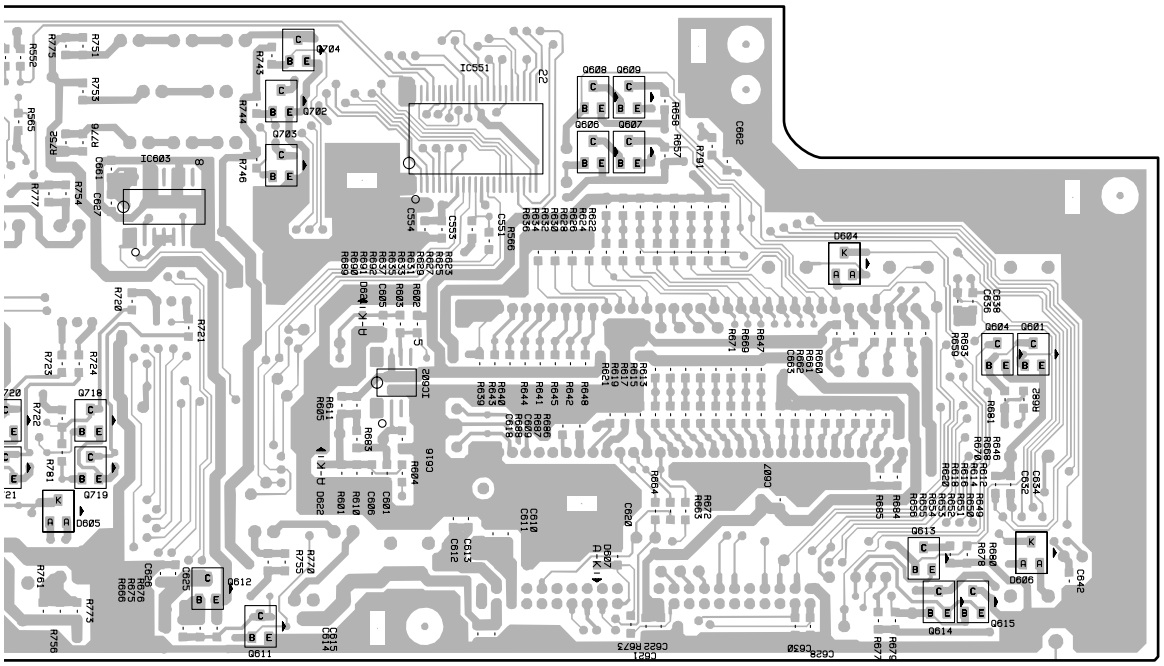
F FRONT ASSY



SIDE B



(BNP1305-D)



(BNP1305-D)

Q702-Q704 IC551 Q606-Q609 Q604 Q601

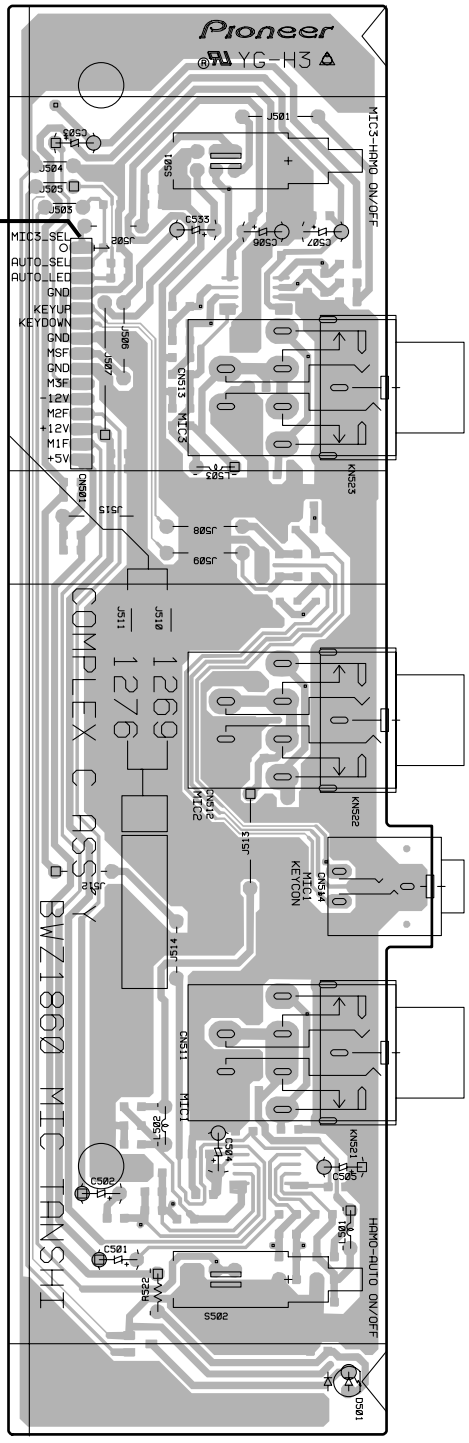
Q612 IC602

Q611 Q613-Q615

4.6 MIC ASSY

E MIC ASSY

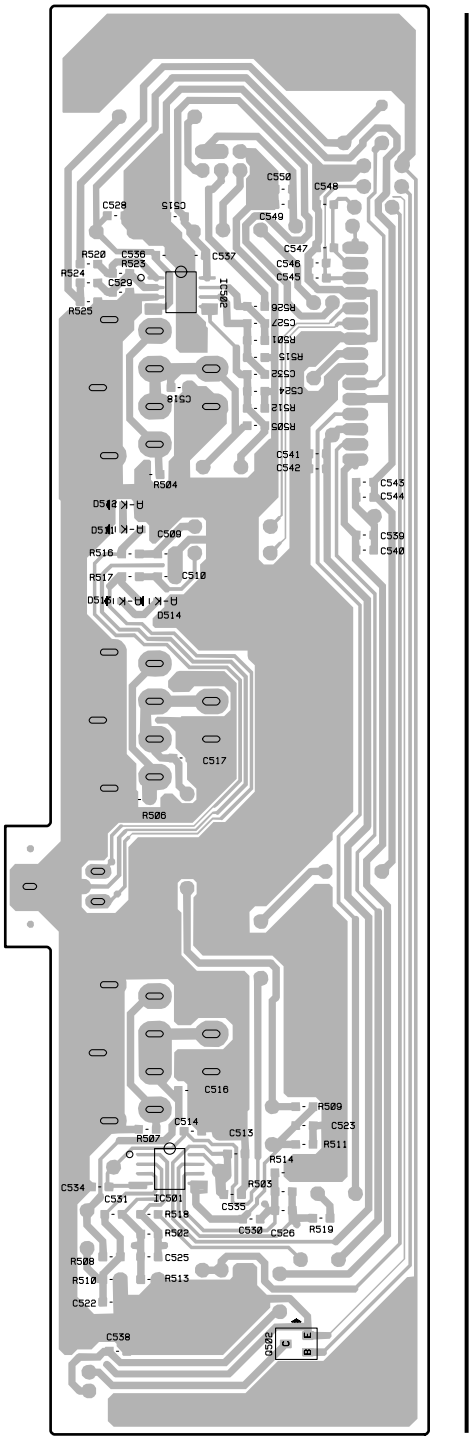
D
CN2001



(BNP1319-C)

SIDE A

E MIC ASSY

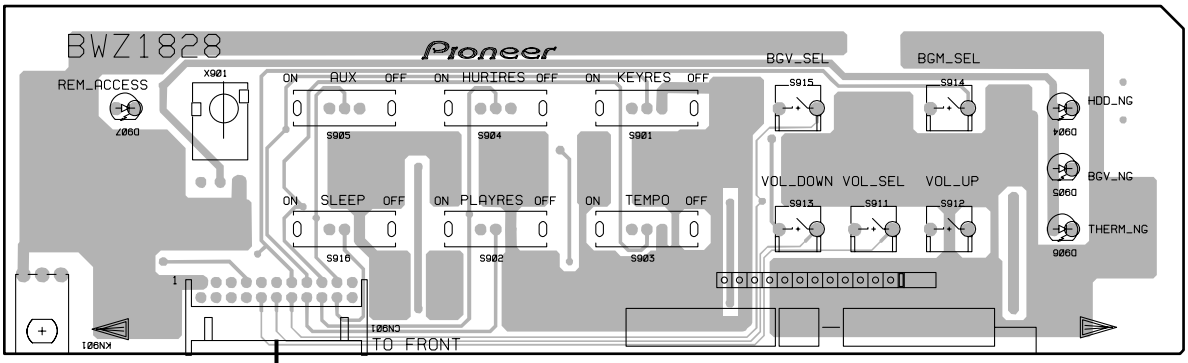


(BNP1319-C)

SIDE B

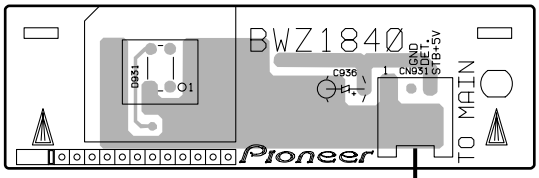
4.7 MENTENANCE1 and HDD DETECT ASSEMBLIES

G MENTENANCE1 ASSY



F CN602

H HDD DETECT ASSY

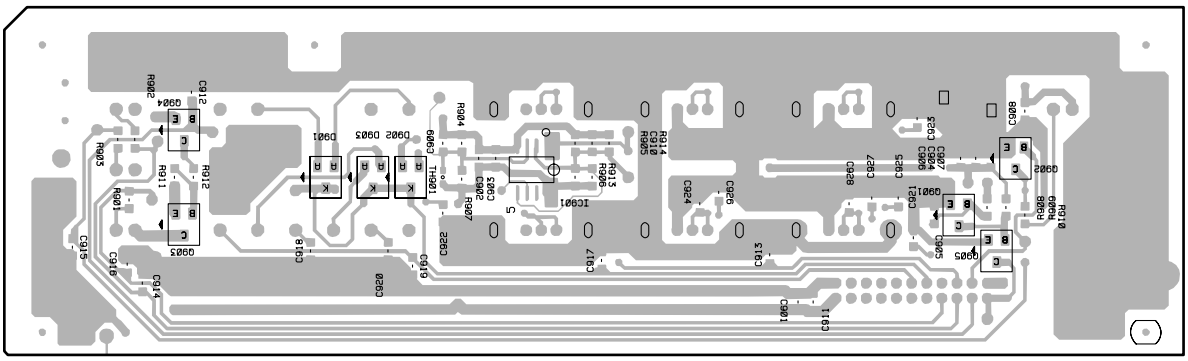


(BNP1305-D)

A CN1009

SIDE A

G MENTENANCE1 ASSY

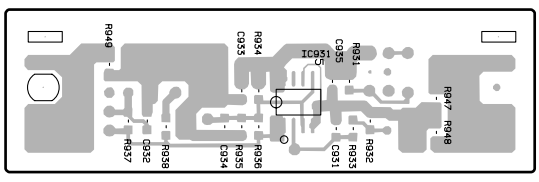


Q904
Q903

IC901

Q902
Q901 Q905

H HDD DETECT ASSY

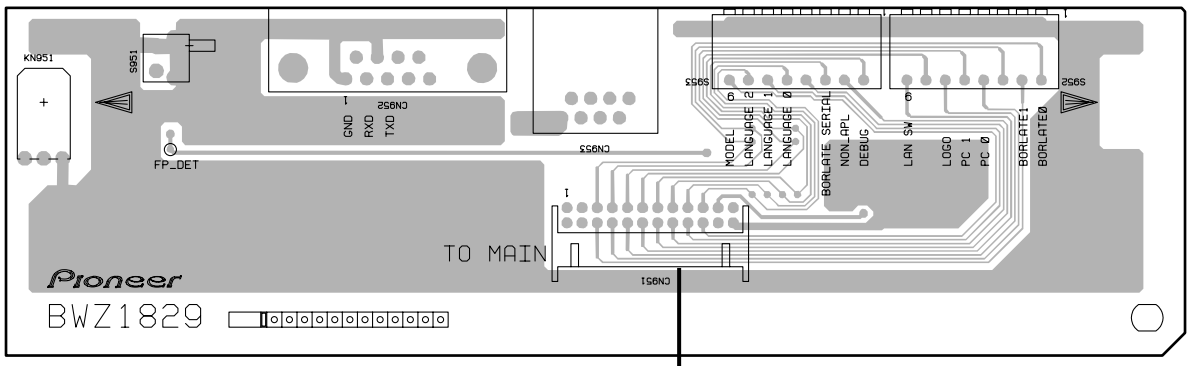


(BNP1305-D)

SIDE B

4.8 MENTENANCE2 ASSY

MENTENANCE2 ASSY

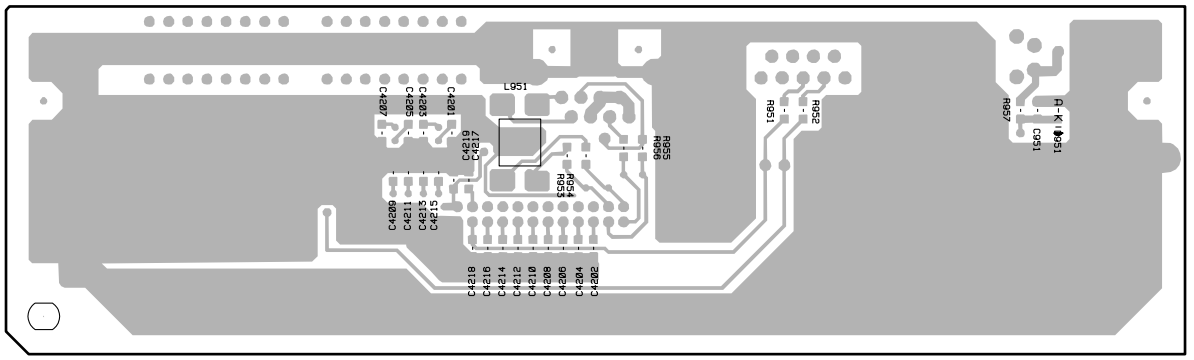


(BNP1305-D)

A CN1008

SIDE A

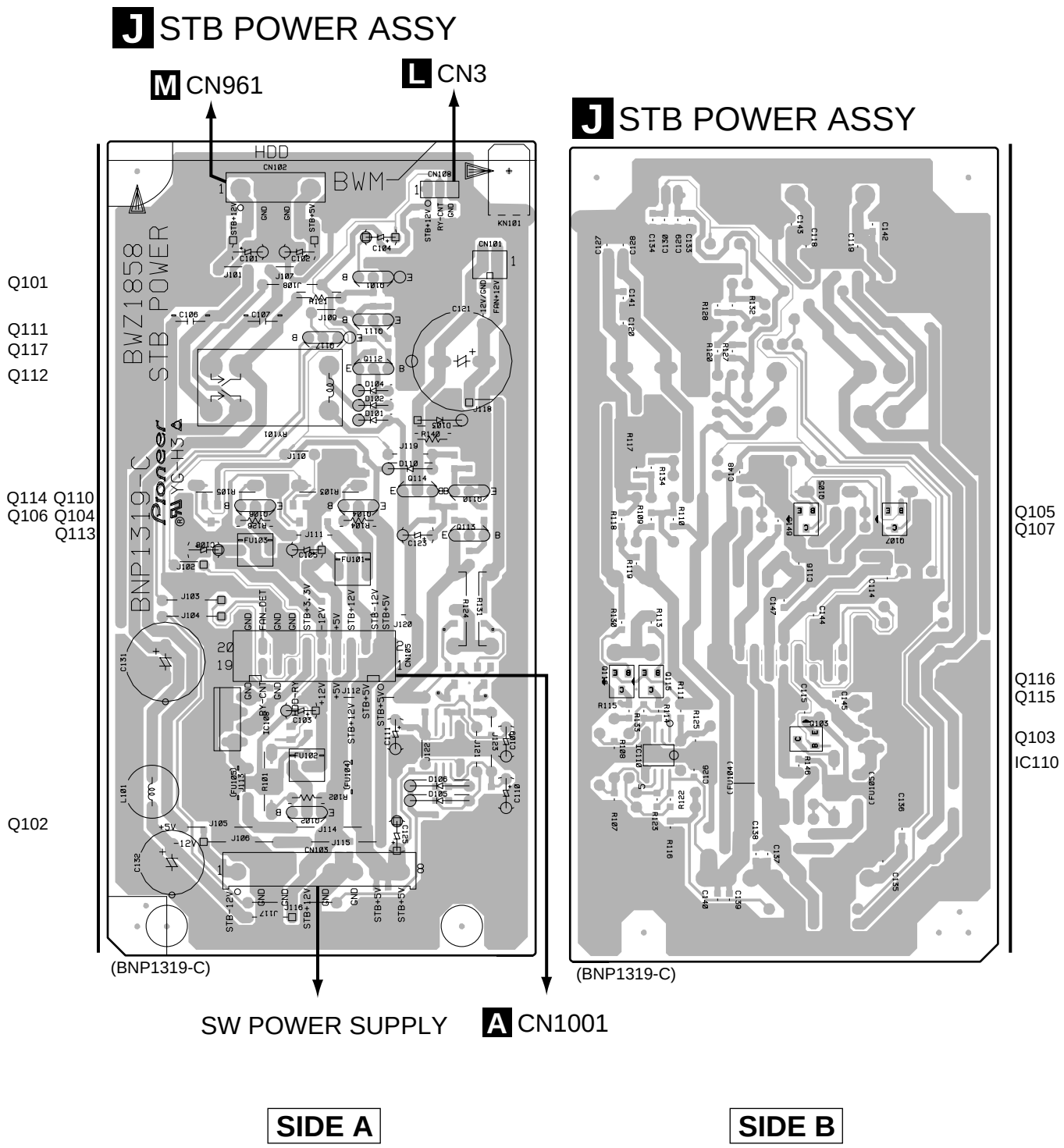
MENTENANCE2 ASSY



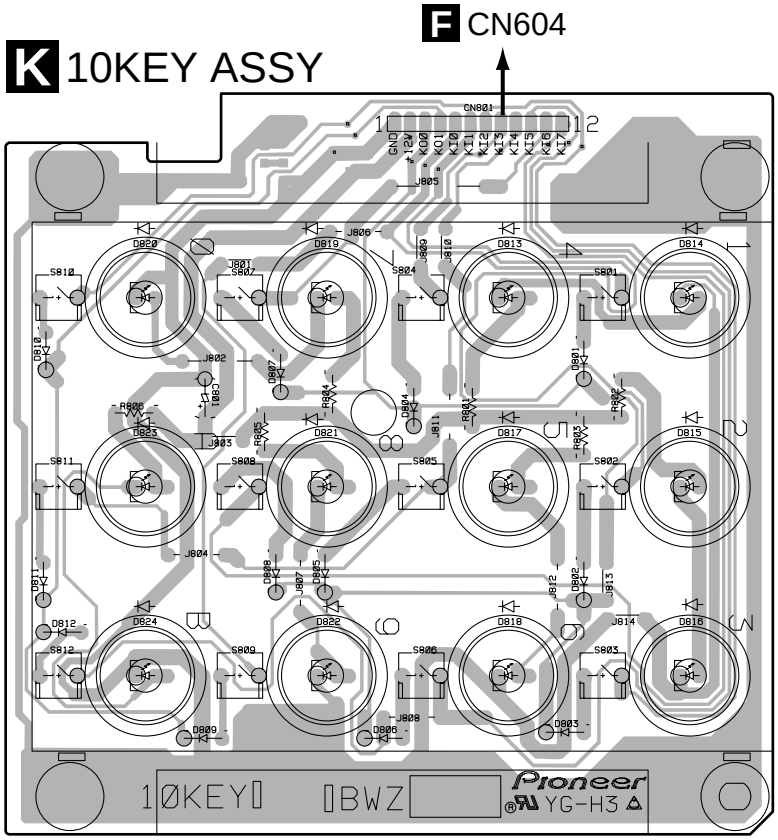
(BNP1305-D)

SIDE B

4.9 STB POWER ASSY

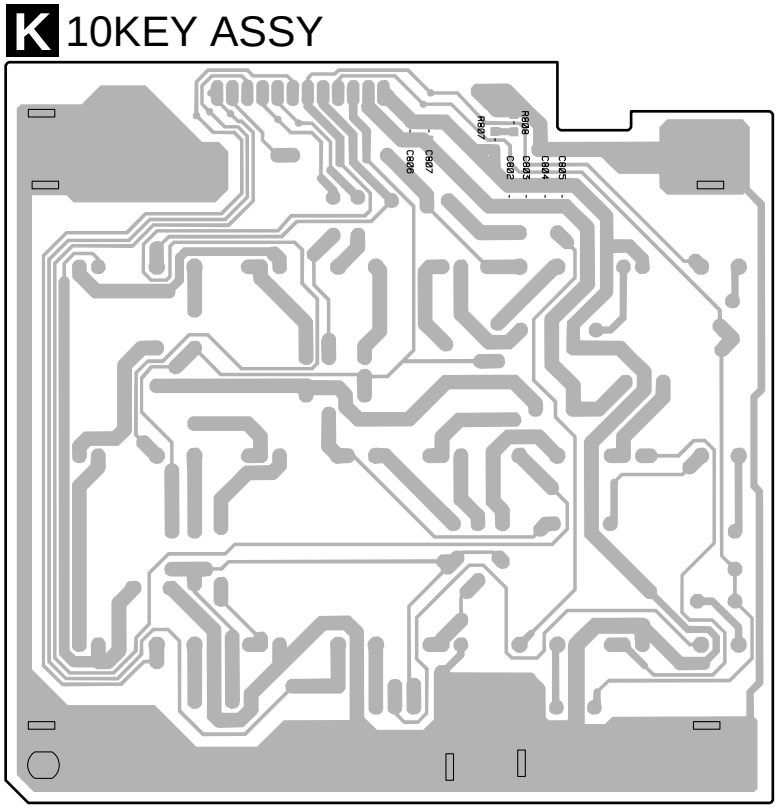


4.10 10KEY ASSY



(BNP1319-C)

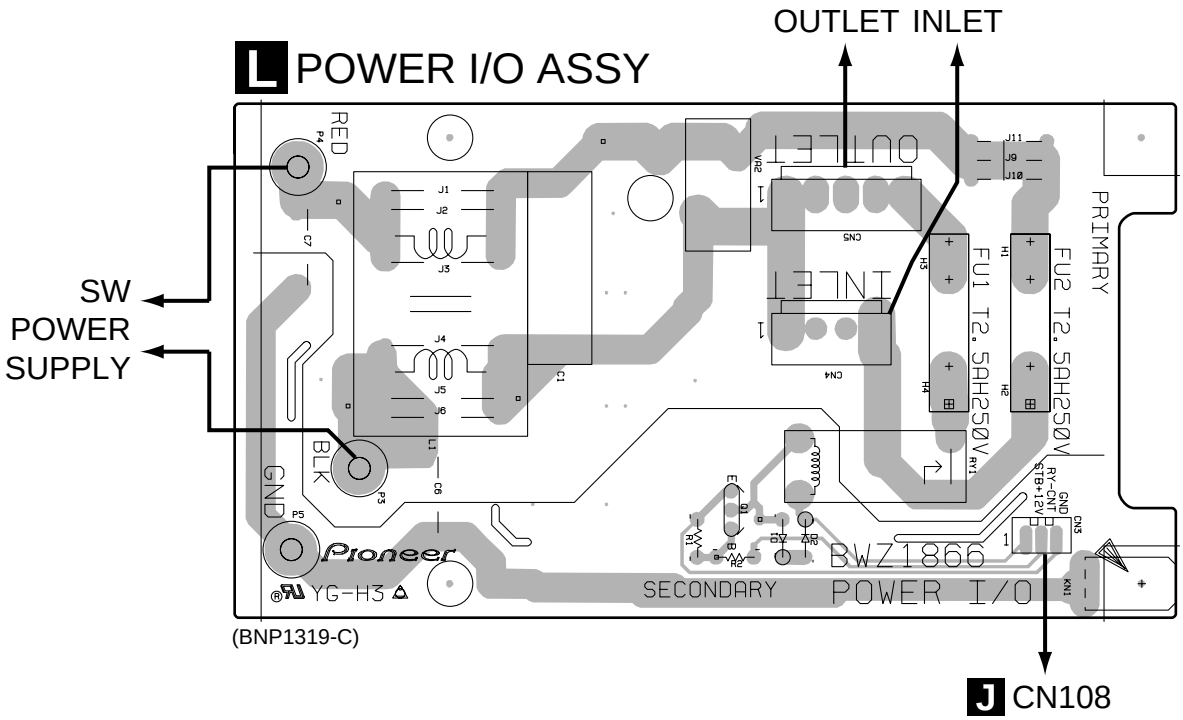
SIDE A



(BNP1319-C)

SIDE B

4.11 POWER I/OASSY

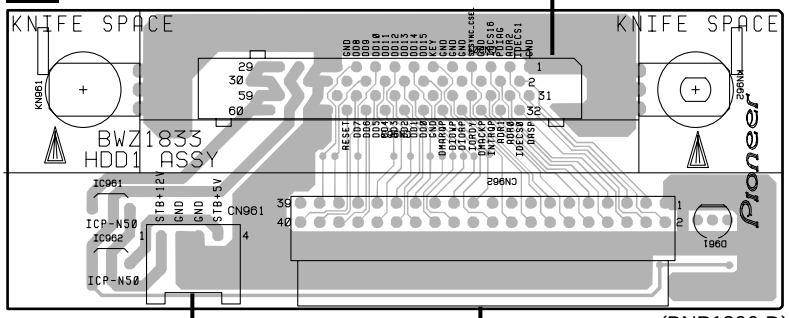


(BNP1319-C)

SIDE A

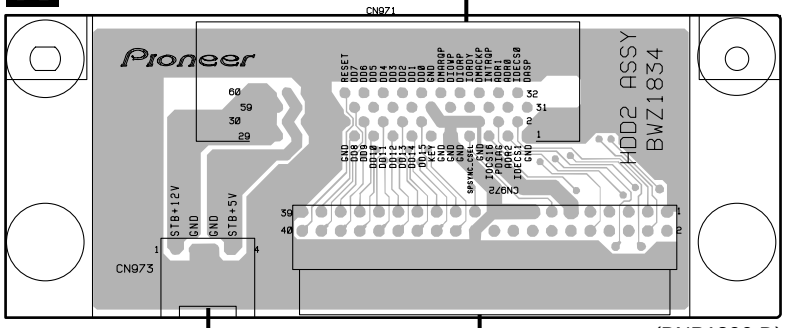
4.12 HDD1 and HDD2 ASSEMBLIES

M HDD1 ASSY



J CN102 **A** CN1004

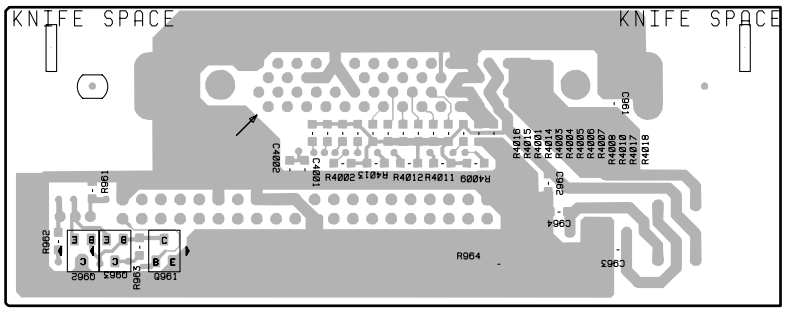
N HDD2 ASSY



HDD

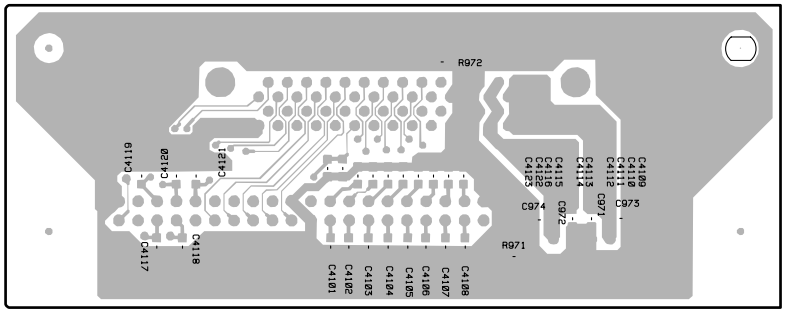
SIDE A

M HDD1 ASSY



Q962 Q963 Q961

N HDD2 ASSY

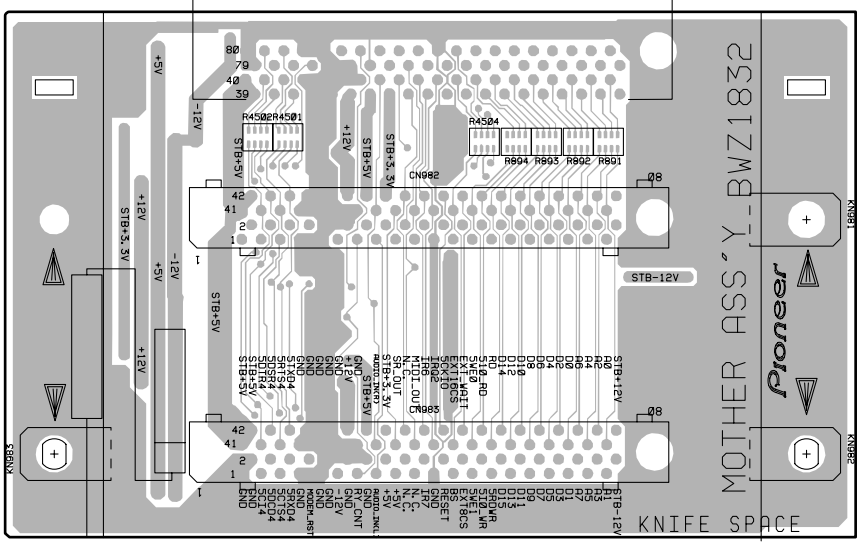


SIDE B

4.13 MOTHER ASSY

A CN1007

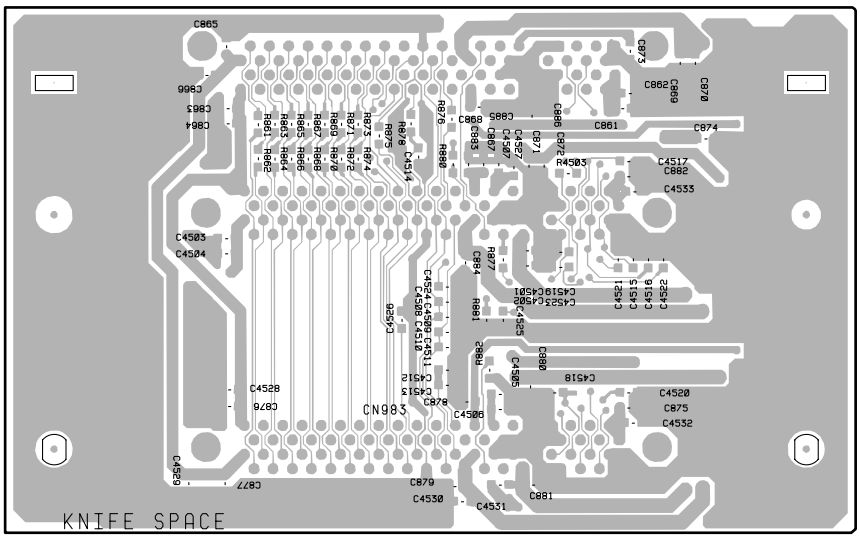
O MOTHER ASSY



(BNP1306-D)

SIDE A

O MOTHER ASSY

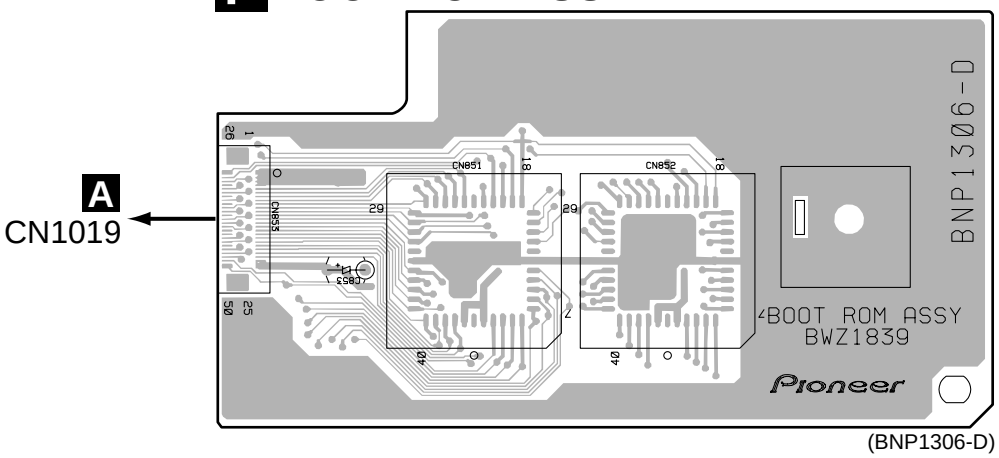


(BNP1306-D)

SIDE B

4.14 BOOT ROM ASSY [MLW/HK TYPE (S/N No. 1 - 100) ONLY]

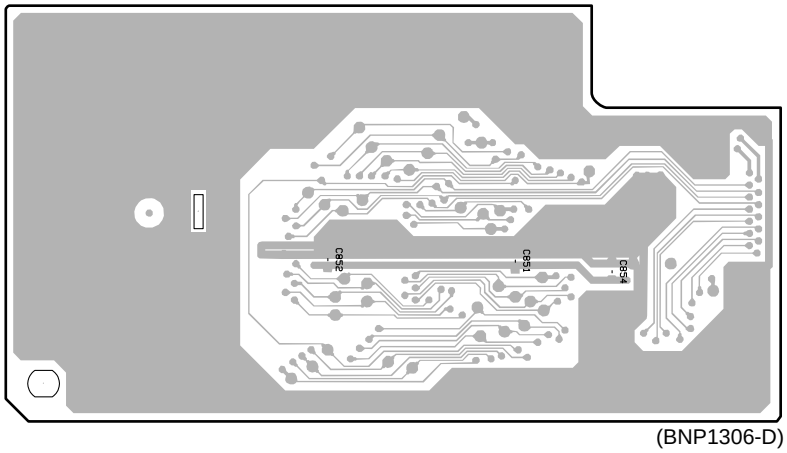
P BOOT ROM ASSY



(BNP1306-D)

SIDE A

P BOOT ROM ASSY



(BNP1306-D)

SIDE B

5. PCB PARTS LIST

NOTES: ●*Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
●*The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
●*When ordering resistors, first convert resistance values into code form as shown in the following examples.*
Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	→	*56 × 10¹*	→	*561* ..... *RD1/4PU 5 6 1 J*
47k Ω	→	*47 × 10³*	→	*473* ..... *RD1/4PU 4 7 3 J*
0.5 Ω	→	*R50*		..... *RN2H R 5 0 K*
1 Ω	→	*1R0*		..... *RS1P 1 R 0 K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	→	*562 × 10¹*	→	*5621* ..... *RN1/4PC 5 6 2 1 F*

LIST OF HOLE PCB ASSEMBLIES

Mark	Symbol and Description	Part No.		Remarks
		L/TA Type	MLW/HK Type	
	MAIN ASSY	BWP1039	BWP1035	
	3D ASSY	BWX1105	BWX1105	
NSP	COMPLEX A ASSY	BWM1274	BWM1259	
	├ FRONT ASSY	BWZ1869	BWZ1827	
	├ MENTENANCE1 ASSY	BWZ1828	BWZ1828	
	├ MENTENANCE2 ASSY	BWZ1829	BWZ1829	
	└ HDD DETECT ASSY	BWZ1840	BWZ1840	
NSP	COMPLEX B ASSY	BWM1275	BWM1260	
	├ AV I/O ASSY	BWZ1870	BWZ1830	
	├ MIC I/O ASSY	BWZ1831	BWZ1831	
	├ MOTHER ASSY	BWZ1832	BWZ1832	
	├ HDD1 ASSY	BWZ1833	BWZ1833	
	├ HDD2 ASSY	BWZ1834	BWZ1834	
	└ BOOT ROM ASSY	Not used	BWZ1839 (*1)	
NSP	COMPLEX C ASSY	BWM1276	BWM1269	
	├ POWER I/O ASSY	BWZ1866	BWZ1866	
	├ STB POWER ASSY	BWZ1858	BWZ1858	
	├ 10 KEY ASSY	BWZ1871	BWZ1859	
	└ MIC ASSY	BWZ1860	BWZ1860	

Note ∗1 : BOOT ROM Assy is being used by 100 from the serial number 1.
It isn't being used with other serial numbers.

A MAIN ASSY

(1) CONTRAST TABLE

BWP1039 and BWP1035 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		BWP1039	BWP1035	
	KN1002 Ground Finger	BNK1115	Not used	
	KN1007 Shield Case	BNK1118	Not used	
	KN1008 Earth Metal	BNK1119	Not used	

(2) PARTS LIST FOR BWP1039

SEMICONDUCTORS

Mark	No.	Description	Part No.
	IC1454		AK4319-VM
	IC1315		BA7230LS
	IC1313		BA7606F
	IC1704		CXA1645M
	IC1007		CY62256-70SNC
	IC1001		HD6417709F
	IC1012		ICP-N50
	IC1308		LA7217M
	IC1023		LH28F800BGE-TL85
	IC1705		LM1881M
	IC1002-IC1005		MB81V18165B-60PFTN
	IC1006		MB86964PFV
	IC1709,IC1710		MC14577CF
	IC1305,IC1307		MM1111XF
	IC1302,IC1303		MN414260CSJ-07
	IC1452		MN414400CJ07
	IC1457		NJM072BM-E
	IC1460-IC1462		NJM4558MD
	IC1708		NJM7805FA
	IC1456		PCM69AU
	IC1029		PD6274A
	IC1025		PDK028A
	IC1026		PDK029A
	IC1027		PDK030A
	IC1028		PDK031A

Mark	No.	Description	Part No.
	IC1024		PDK040A
	IC1601		SN75188NS
	IC1602		SN75189ANS
	IC1603		SN7534050NS
	IC1459		TC4053BF
	IC1041		TC74AC00F
	IC1464		TC74AC04F
	IC1042,IC1605		TC74AC08F
	IC1043,IC1104		TC74AC32F
	IC1044,IC1045		TC74AC74F
	IC1032		TC74ACT08F
	IC1035		TC74ACT139F
	IC1019-IC1022,IC1033,IC1038		TC74ACT244F
	IC1039		TC74ACT244F
	IC1036,IC1037,IC1040		TC74ACT245F
	IC1304		TC74ACT32F
	IC1103,IC1108,IC1109,IC1458		TC74ACT573F
	IC1316,IC1702		TC74HC04AF
	IC1701		TC74HC08AF
	IC1314		TC74HC123AF
	IC1310,IC1311,IC1703		TC74HC126AF
	IC1312		TC74HC32AF
	IC1009		TC74HC4053AF
	IC1463		TC74HC74AF
	IC1008		TC74HCU04AF
	IC1030,IC1031		TC74LCX08F
	IC1017		TC74LCX244F
	IC1101,IC1102,IC1105,IC1107		TC74LCX573F
	IC1013-IC1016		TC74LVX4245FS
	IC1453,IC1706		TLC2932IPW
	IC1451		TMS320AV110PBM
	IC1455		UPD63200GS
	IC1011		UPD72611GF-3BA
	IC1301		YGV613
	Q1015,Q1016		2SA1162
	Q1010,Q1301-Q1304,Q3001		2SC2712
	Q1006,Q1008		DTA143EK
	Q1001,Q1007,Q1009		DTC124EK
	Q1002-Q1005,Q1011-Q1014		DTC143EK
	D1002,D1022,D1023,D1026		1SS181
	D1027,D1028		1SS226
	D1451,D1702		1SS319
	D1013		D1FS4
	D1017-D1020		SML-210VT
	D1006		UDZ2.7B
	D1004		UDZ3.6B
	D1009,D1024,D1025,D1029,D1030		UDZS5.1B
	D1601,D1711-D1719		UDZS5.1B

COILS

	L1004	BTH1081
	L1002	BTX1023
	L1401,L1402	LCTA2R2J3225
	L1001	LCTA4R7J3225
	L1303	LCTA680J3225

SWITCHES AND RELAYS

	S1001,S1002	ASH1029
	RY1001,RY1002	BSR1014

Mark	No.	Description	Part No.

CAPACITORS

	C1516,C1517,C1536-C1538	CCSQCH101J50
	C1720	CCSQCH120J50
	C1488,C1490-C1492	CCSQCH151J50
	C1003,C1004,C1031,C1032	CCSQCH220J50
	C1158-C1161,C1515,C1553,C1604	CCSQCH220J50
	C1714	CCSQCH220J50
	C1376,C1380,C1381,C1522,C1523	CCSQCH221J50
	C1540,C1541,C1801,C1802,C1804	CCSQCH221J50
	C1811,C1814	CCSQCH221J50
	C1018,C1019,C1154,C1155	CCSQCH270J50
	C1455,C1456	CCSQCH300J50
	C1152	CCSQCH330J50
	C1153	CCSQCH390J50
	C3012	CCSQCH470J50
	C1014,C1601,C1602,C3209,C3210	CCSQCH471J50
	C1731,C3205,C3206	CCSQCH680J50
	C1392	CCSQCH820J50
	C1331	CCSQCH821J50
	C1494,C1495	CEGA470M16
	C1042,C1051,C1094,C1096,C1100	CEV100M16
	C1110,C1111,C1113,C1116-C1118	CEV100M16
	C1122,C1138,C1139,C1143-C1147	CEV100M16
	C1149,C1156,C1157,C1344,C1346	CEV100M16
	C1355,C1356,C1358,C1362,C1366	CEV100M16
	C1379,C1383,C1385,C1387,C1400	CEV100M16
	C1402,C1404,C1406,C1408,C1409	CEV100M16
	C1452-C1454,C1467,C1468,C1484	CEV100M16
	C1487,C1489,C1500,C1505	CEV100M16
	C1507-C1510,C1512,C1514	CEV100M16
	C1519-C1521,C1526,C1535,C1539	CEV100M16
	C1542,C1545,C1546,C1548,C1550	CEV100M16
	C1707,C1713,C1722,C1727,C1739	CEV100M16
	C1743,C3003	CEV100M16
	C1544,C1547,C1549	CEV100M35
	C1083,C1086,C1087,C1333,C1368	CEV101M6R3
	C1641,C1642,C1726,C1732	CEV101M6R3
	C1301-C1304,C1307-C1313,C1336	CEV1R0M50
	C1338,C1373-C1375	CEV1R0M50
	C1072,C1084,C1085,C1088,C1089	CEV470M16
	C1093,C1132,C1134,C1370-C1372	CEV470M16
	C1451,C1472,C1474,C1479,C1482	CEV470M16
	C1513,C1551,C1552,C1705,C1706	CEV470M16
	C1721,C1724,C1733,C1735,C3005	CEV470M16
	C3008	CEV470M16
	C1478,C1481,C1485,C1486,C1497	CEV470M6R3
	C1710,C1715,C3004	CEV470M6R3
	C1016	CEV4R7M35
	C1077-C1081,C1339,C1341,C1343	CKSQYB102K50
	C1363,C1501,C1502,C1518,C3002	CKSQYB102K50
	C3215-C3218	CKSQYB102K50
	C1001,C1005-C1013,C1017	CKSQYB103K50
	C1022-C1029,C1033,C1034	CKSQYB103K50
	C1036-C1041,C1044-C1050	CKSQYB103K50
	C1052-C1071,C1073-C1076,C1092	CKSQYB103K50
	C1168,C1337,C1345,C1347,C1359	CKSQYB103K50
	C1361,C1365,C1378,C1384,C1386	CKSQYB103K50
	C1702,C1704,C1708,C1711,C1716	CKSQYB103K50
	C1734,C1736,C1803,C1807	CKSQYB103K50
	C1809,C1810	CKSQYB103K50
	C1460-C1463,C1471,C1476	CKSQYB104K25

Mark	No.	Description	Part No.
	C1717-C1719,C1747		CKSQYB104K25
	C1314		CKSQYB122K50
	C1332		CKSQYB223K50
	C1020,C1021		CKSQYB471K50
	C1305,C1351,C1354,C1357,C1382		CKSQYB473K50
	C1723,C1725,C1740,C1744,C1745		CKSQYB473K50
	C1738		CKSQYB561K50
	C1477,C1480		CKSQYB681K50
	C1097-C1099,C1112,C1114,C1115		CKSQYF103Z50
	C1119-C1121,C1123-C1131,C1133		CKSQYF103Z50
	C1135-C1137,C1140-C1142		CKSQYF103Z50
	C1150,C1151,C1457-C1459		CKSQYF103Z50
	C1464-C1466,C1469,C1470,C1493		CKSQYF103Z50
	C1496,C1498,C1499,C1503,C1504		CKSQYF103Z50
	C1506,C1511,C1524,C1525		CKSQYF103Z50
	C1527-C1534,C1543,C1643		CKSQYF103Z50
	C1015,C1030,C1043,C1101-C1107		CKSQYF104Z50
	C1109,C1394-C1399,C1401,C1403		CKSQYF104Z50
	C1405,C1407,C1410-C1419,C1473		CKSQYF104Z50
	C1475,C1483,C1709,C1712		CKSQYF104Z50
	C1741,C1742,C1800,C3006,C3007		CKSQYF104Z50
	C1746		CKSQYF105Z16
	C1002 (10000pF)		PCH1132

RESISTORS

	R1109-R1112,R1115,R1118		RA4C101J
	R1506,R1507,R1509,R1510,R1609		RA4C101J
	R1101,R1102,R1105,R1106		RA4C102J
	R1122,R1123,R1125,R1126		RA4C102J
	R1061,R1103,R1104,R1107,R1108		RA4C103J
	R1127,R1129,R1130		RA4C103J
	R1026-R1028,R1062-R1069		RA4C220J
	R1618-R1623		RA4C220J
	R1049,R1051,R1053,R1055,R1085		RA4C221J
	R1050,R1052,R1054,R1056		RA4C331J
	R1610		RA4C391J
	R1388-R1398,R1402,R1540,R1541		RA4C470J
	R1005-R1016,R1018,R1019		RA4C472J
	R1021-R1023,R1025,R1098,R1162		RA4C472J
	R1165		RA4C472J
	VR1301		VRTP6VS502
	Other Resistors		RS1/10S□□□J

OTHERS

	CN1006	20P PLUG	AKM1149
	CN1606	8P DIN SOCKET	AKP-059
	CN1605	4P MINI DIN SOCKET	AKP1064
	1001	HEAT SINK	ANH-309
		SCREW	BBZ30P080FCU
	X1701	CRYSTAL RESONATOR (3.579545MHz)	ASS1021
	X1303	CERAMIC RESONATOR (500kHz)	ASS1063
	CN1004	40P PIN HEADER	BKC1009
	CN1001	20P PLUG (L)	BKM1068
	CN1008	24P PLUG	BKM1072
	CN1603	9P D-SUB SOCKET	BKP1057
	CN1602	MODULER CONNECTOR	BKP1112
	KN1002	GROUND FINGER	BNK1115

Mark	No.	Description	Part No.
	KN1007	SHIELD CASE	BNK1118
	KN1008	EARTH METAL	BNK1119
	CN1010	30P RECEPTACLE	BKP1113
	CN1012	60P RECEPTACLE	BKP1114
	CN1007,CN1011	RECEPTACLE	BKP1115
	X1005	CRYSTAL RESONATOR (9.8304MHz)	BSS1023
	X1002	CRYSTAL RESONATOR	BSS1027
	X1001	CRYSTAL RESONATOR (7.3728MHz)	BSS1041
	X1004	CRYSTAL RESONATOR (4MHz)	BSS1056
	X1003	CRYSTAL RESONATOR (20.0MHz)	BSS1065
	X1451	CRYSTAL RESONATOR (24MHz)	BSS1070
	X1304	CRYSTAL RESONATOR (14.31818MHz)	BSS1071
	CN1604	DIP CONNECTOR 50P	DKP3292
	CN1009	3P PLUG	KM250MA3
	CN1017	14P PLUG	KM200SA14

B 3D ASSY

SEMICONDUCTORS

	IC1210	HD6417709F
	IC1201	HD64411
	IC1211,IC1212	MB811171622A-100FN
	IC1208,IC1209	MB8118165A-60PFTN
	IC1213	PD6269B
	IC1202	TC74ACT04F
	IC1227	TC74ACT08F
	IC1217-IC1219,IC1901	TC74ACT244F
	IC1223,IC1224,IC1226	TC74ACT32F
	IC1225	TC74LCX04F
	IC1220	TC74LCX244F
	IC1215,IC1216	TC74LVX4245FS
	Q1201-Q1203	2SC2712
	D1205	UDZ3.6B
	D1203	UDZS5.1B

CAPACITORS

	C1233,C1257-C1259	CCSRCH270J50
	C1280	CCSRCH330J50
	C1221	CCSRCH470J50
	C1251,C1255	CCSRCH471J50
	C1229-C1231,C1277,C1279	CEV470M16
	C1913-C1915	CEV470M16
	C1202,C1204,C1206,C1208,C1210	CEV4R7M35
	C1212,C1214,C1225,C1234,C1252	CEV4R7M35
	C1264,C1267,C1269,C1273,C1274	CEV4R7M35
	C1291,C1902,C1904,C1908-C1910	CEV4R7M35
	C1235	CKSRYB102K50
	C1201,C1203,C1205,C1207,C1209	CKSRYB103K50
	C1211,C1213,C1215-C1220	CKSRYB103K50
	C1222-C1224,C1226-C1228,C1232	CKSRYB103K50
	C1236-C1249,C1253,C1256	CKSRYB103K50
	C1260-C1263,C1265,C1266,C1268	CKSRYB103K50
	C1270-C1272,C1275,C1276,C1278	CKSRYB103K50
	C1285-C1290,C1294-C1300	CKSRYB103K50
	C1302-C1305,C1901,C1903	CKSRYB103K50
	C1905-C1907,C1911	CKSRYB103K50
	C1250,C1254	CKSRYB471K50

Mark	No.	Description	Part No.
RESISTORS			
	R1201-R1208,R1265-R1278,R1282		RA4C470J
	R1307-R1310,R1902		RA4C470J
	R1210,R1859,R1903-R1914		RA4C473J
	R1878,R1879,R1890		RS1/16S0R0J
	R1301		RS1/16S101J
	R1867,R1870,R1873		RS1/16S102J
	R1240-R1244,R1247-R1251		RS1/16S103J
	R1254-R1258		RS1/16S103J
	R1261-R1263		RS1/16S104J
	R1865,R1868,R1871		RS1/16S183J
	R1219-R1239		RS1/16S203J
	R1209		RS1/16S302J
	R1866,R1869,R1872		RS1/16S333J
	R1211-R1218,R1264,R1281,R1283		RS1/16S470J
	R1289,R1292,R1294-R1298,R1300		RS1/16S470J
	R1302-R1306,R1317-R1320,R1322		RS1/16S470J
	R1881,R1883-R1888,R1901		RS1/16S470J
	R1279,R1280,R1284-R1287		RS1/16S473J
	R1290,R1291,R1293,R1311,R1312		RS1/16S473J
	R1315,R1325,R1858,R1874,R1875		RS1/16S473J
	R1917,R1918		RS1/16S473J
	R1245,R1246,R1252,R1253		RS1/16S512J
	R1259,R1260		RS1/16S512J
	R1288		RS1/16S561J
	Other Resistors		RS1/10S□□□J
OTHERS			
	CN1201	80P PIN HEADER (L)	BKM1066
	X1201	CRYSTAL RESONATOR (8.25MHz)	BSS1072

C AV I/O ASSY

(1) CONTRAST TABLE

BWZ1870 and BWZ1830 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		BWZ1870	BWZ1830	
	KN201 Stick Finger Twist	BNK1116	Not used	

(2) PARTS LIST FOR BWZ1870

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC201		CXD2721Q-1
	IC227		M51951BSL
	IC402		MM1111XF
	IC403,IC404		MM1112XF
	IC401		MM1113XF
	IC202,IC204,IC205,IC207,IC209		NJM4558MD
	IC211-IC213,IC215-IC217		NJM4558MD
	IC221,IC222,IC226		NJM4558MD
	IC228		NJM78L09A
	IC214,IC224		TC4052BF
	IC225		TC4053BF
	IC203		TC74AC390F
	IC206,IC219		TC9210P
	IC208,IC218,IC220,IC223		UPC4570G2
	IC210		UPC78L05J
	Q401,Q402		2SA933S
	Q201,Q202		2SC2712
	Q216-Q221		2SC3326
	Q203,Q222		2SK246
	Q205		DTA124EK
	Q208-Q210,Q215		DTA143EK
	Q204,Q206,Q223		DTC124EK
	D201-D203,D211		1SS181
	D205-D210		UDZ12B
	D401-D406		UDZS5.1B
	D221-D224		UDZS5.6B
COIL AND FILTER			
	F201		ATF1011
	L202		LCTA2R2J2520
CAPACITORS			
	C224,C235,C236		CCSQCH101J50
	C231,C232		CCSQCH102J50
	C357,C358		CCSQCH121J50
	C362-C364,C366-C368		CCSQCH221J50
	C277,C278,C282-C285		CCSQCH270J50
	C294,C295,C300-C305		CCSQCH270J50
	C247,C261-C264,C286,C287		CCSQCH330J50
	C296,C298		CCSQCH330J50
	C208,C227-C230,C237		CCSQCH331J50
	C259,C260,C292		CCSQCH391J50
	C251		CCSQCH680J50
	C203,C204		CCSQCH8R0D50
	C340-C342,C347,C348		CEAT100M50
	C355,C356		CEAT100M50
	C417,C418		CEAT102M16
	C201,C238		CEAT470M25
	C421		CEAT470M35
	C269,C270		CEGA470M16
	C202,C210,C233,C234,C239		CEV100M16
	C242,C243,C246,C275,C276		CEV100M16
	C331,C332		CEV100M16
	C253-C255,C271-C274		CEV100M35
	C280,C281,C290,C291,C293		CEV100M35
	C329,C401,C402,C404-C407		CEV470M16
	C409,C410,C413,C414		CEV470M16
	C297,C299,C359,C360		CEV4R7M35
	C249,C250,C424-C427		CKSQYB102K50
	C205-C207,C209,C211-C223		CKSQYB103K50
	C225,C226,C240,C241		CKSQYB103K50
	C244,C245,C252,C257,C258		CKSQYB103K50
	C265-C268,C279,C288,C289		CKSQYB103K50
	C306-C328,C330,C335,C337		CKSQYB103K50
	C343-C346,C349-C354,C361		CKSQYB103K50
	C365,C369,C370,C403,C408		CKSQYB103K50
	C411,C412,C415,C416		CKSQYB103K50
	C334,C338		CQMA102J50
	C333,C336		CQMA471J50
RESISTORS			
	All Resistors		RS1/10S□□□J

Mark	No.	Description	Part No.
OTHERS			
	CN202	12P PIN JACK	AKB7004
	CN203	2P PIN JACK	BKB1016
	CN201	60P PIN HEADER (L)	BKM1065
	HJ202	2P MINI JACK	BKN1005
	201	STIC FINGER TWIST	BNK1116
	X201	CRYSTAL RESONATOR (33.8688MHz)	BSS1069

D MIC I/O ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC2305		M51951BSL
	IC2204		M5238AFP
	IC2101-IC2105,IC2201,IC2202		NJM4558MD
	IC2302,IC2304		NJM4558MD
	IC2002		PD5401C
	IC2001		PD5458A
	IC2205		TC4053BF
	IC2003		TC74HC00AF
	IC2203,IC2301,IC2303		UPC4570G2
	IC2004,IC2005		UPC78L05J
	IC2106		YSS244
	Q2301-Q2305		2SC3326
	Q2201-Q2210		2SK246
	Q2211-Q2215,Q2308		DTA143EK
	Q2306,Q2307		DTC124EK
	Q2001,Q2002		DTC143EK
	D2301		1SS181
	D2001-D2004,D2201,D2202		1SS184
	D2101-D2103		1SS226
COILS AND FILTERS			
	F2301-F2303		ATF1011
	L2001		BTH1070
	L2002		LCTA100J3225
CAPACITORS			
	C2151,C2152		CCSQCH100D50
	C2005-C2012		CCSQCH180J50
	C2301,C2310,C2312		CCSQCH270J50
	C2136,C2138,C2149,C2202,C2204		CCSQCH330J50
	C2215,C2217-C2219,C2302,C2307		CCSQCH330J50
	C2314,C2317,C2318,C2324		CCSQCH330J50
	C2321-C2323,C2341,C2342		CCSQCH391J50
	C2216,C2328		CCSQCH470J50
	C2129,C2130,C2148		CCSQSL391J50
	C2020,C2101,C2103,C2104		CEAT100M50
	C2106,C2107,C2109,C2122,C2124		CEAT100M50
	C2142,C2143,C2145,C2154-C2156		CEAT100M50
	C2201,C2205,C2207,C2208		CEAT100M50
	C2210-C2212,C2221-C2225,C2227		CEAT100M50
	C2229,C2303,C2305,C2306,C2308		CEAT100M50
	C2311,C2313,C2316,C2319,C2320		CEAT100M50
	C2327,C2330,C2332,C2334,C2336		CEAT100M50
	C2338-C2340		CEAT100M50
	C2017,C2140,C2150		CEAT101M10
	C2019		CEAT102M16
	C2337		CEAT1R0M50
	C2016,C2018		CEAT221M10
	C2230,C2232		CEAT470M50
	C2131,C2134		CEAT4R7M50
	C2325		CEATR10M50
	C2004,C2013		CKSQYB102K50
	C2024,C2025		CKSQYB103K50
	C2126,C2128		CKSQYB272K50
	C2110-C2112,C2115-C2120		CKSQYB332K50
	C2147		CKSQYB472K50
	C2125,C2127,C2146		CKSQYB682K50
	C2001,C2102,C2105,C2108,C2121		CKSQYF103Z50
	C2123,C2137,C2141,C2144,C2153		CKSQYF103Z50
	C2203,C2206,C2209,C2213,C2214		CKSQYF103Z50
	C2220,C2226,C2228,C2231,C2233		CKSQYF103Z50
	C2304,C2309,C2315,C2326,C2329		CKSQYF103Z50
	C2331,C2333,C2335		CKSQYF103Z50
	C2113,C2114,C2139		CKSQYF104Z50
	C2002,C2003,C2014,C2015		CKSQYF473Z50
RESISTORS			
	All Resistors		RS1/10S□□□J
OTHERS			
⚠	FU2301-FU2303	PROTECTOR (1A)	AEK7009
	X2001,X2002	CERAMIC RESONATOR	ASS1015
	X2101	CRYSTAL RESONATOR (16.9MHz)	ASS1073
	CN2302,CN2304	2P PIN JACK	BKB1014
	CN2303	3P PIN JACK	BKB1015
	CN2301	30P PIN HEADER (L)	BKM1064
	JA2305	1P PIN JACK (NI,BLK)	VKB1077
	CN2002,CN2003	64P IC SOCKET	AKH1008
	CN2202	L-PLUG (3P)	KM200NA3L
	CN2203	L-PLUG (4P)	KM200NA4L
	CN2201	L-PLUG (5P)	KM200NA5L
	CN2204	L-PLUG (9P)	KM200NA9L
	CN2001	L-PLUG (15P)	KM250MA15L

E MIC ASSY

Mark	No.	Description	Part No.
SEMICONDUCTORS			
	IC501,IC502		UPC4570G2
	Q502		DTC124EK
	D501		BEL1013
	D511-D514		UDZS5.1B
COILS			
	L501-L503		LAU221K
SWITCHES			
	S501,S502		ASG1026
CAPACITORS			
	C522-C524		CCSQCH220J50
	C525-C527,C530-C532		CCSQCH330J50
	C504-C507		CEAS101M25
	C501-C503,C533		CEAS4R7M50
	C516-C518,C534-C539,C541		CKSQYB102K50

Mark	No.	Description	Part No.
	C543,C545,C547,C549		CKSQYB102K50
	C540,C542,C544,C546,C548		CKSQYB103K50
	C550		CKSQYB103K50
	C509,C510,C513-C515,C528		CKSQYF104Z50

RESISTORS

	R522	RD1/4PU361J
	Other Resistors	RS1/10S□□□J

OTHERS

	CN514 MINI JACK	AKN-210
	CN511-CN513 HEADPHONE JACK	AKN1010

F FRONT ASSY

(1) CONTRAST TABLE

BWZ1869 and BWZ1827 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		BWZ1869	BWZ1827	
	KN601-KN603 Front Metal	BNK1117	Not used	

(2) PARTS LIST FOR BWZ1869

SEMICONDUCTORS

	IC602	M51955BFP
	IC551,IC552,IC701	M66313FP
	IC601	PD5457A
	IC603	TC74AC00F
	Q709,Q711,Q713,Q715,Q717	2SA1162
	Q719,Q721,Q723,Q725,Q727	2SA1162
	Q612	2SA1182
	Q603,Q610,Q614	2SC2712
	Q606,Q608,Q613,Q615,Q708	DTA143EK
	Q710,Q712,Q714,Q716,Q718	DTA143EK
	Q720,Q722,Q724,Q726	DTA143EK
	Q602,Q605,Q611,Q701-Q705	DTC124EK
	Q601,Q604,Q607,Q609	DTC143EK
	D601-D606	1SS184
	D551-D556	BEL1010
	D613	BEL1012
	D612,D723,D724	BEL1013
	D701,D702,D725-D727	BEL1014
	D730,D731,D736-D746,D749	BEL1014
	D715,D716,D719-D722	BEL1015
	D747,D748	BEL1015
	D717,D718,D728,D729	BEL1031
	D733,D734	BEL1031
	D714	BEL1035
	D703-D713,D732	SLP-581D-52
	D607	UDZS5.6B

SWITCHES

	S601-S611	VSG1009
	S612	VSG1010

CAPACITORS

	C608	CEJA100M16
	C619	CEJA4R7M35
	C551,C552,C554,C556,C602	CKSQYB102K50
	C610,C613,C615,C621,C623	CKSQYB102K50
	C625,C661,C701,C703	CKSQYB102K50

Mark	No.	Description	Part No.
	C611,C612,C614,C622,C624		CKSQYB103K50
	C626		CKSQYB103K50
	C553,C555,C603,C607,C609		CKSQYF103Z50
	C616,C618,C627,C702		CKSQYF103Z50
	C601,C604-C606,C620		CKSQYF104Z50

RESISTORS

	R601,R610	RS1/10S1502F
	R605,R611	RS1/10S3902F
	Other Resistors	RS1/10S□□□J

OTHERS

	X601 CERAMIC RESONATOR	ASS1015
	CN601 20P L TYPE PLUG	BKM1070
	CN602 22P L TYPE PLUG	BKM1071
	CN604 12P SOCKET	BKP1081
	KN601-KN603 FRONT METAL	BNK1117
	CN611 64P IC SOCKET	AKH1008

G MENTENANCE1 ASSY

SEMICONDUCTORS

	IC901	M5233FP
	Q903	2SA1162
	Q901	2SC2712
	Q902,Q904,Q905	DTC124EK
	D901-D903	1SS184
	D904,D905,D907	BEL1013
	D906	BEL1015
	TH901	TBPS1R104K

SWITCHES

	S901-S905,S916	ASH1039
	S911-S915	VSG1010

CAPACITORS

	C905,C911	CKSQYB102K50
	C903,C909	CKSQYB103K50
	C907,C908	CKSQYF103Z50
	C901,C902,C904,C906,C910	CKSQYF104Z50

RESISTORS

	All Resistors	RS1/10S□□□J

OTHERS

	CN901 3P L TYPE PLUG	BKM1071

H HD DETECT ASSY

SEMICONDUCTORS

	IC931	M5233FP
	D931	GP1S94

CAPACITORS

	C931	CCSQSL470J50
	C932,C933	CKSQYF103Z50

RESISTORS

	All Resistors	RS1/10S□□□J

OTHERS

	CN931 3P L TYPE PLUG	KM250MA3L

Mark	No.	Description	Part No.

I MENTENANCE2 ASSY

SEMICONDUCTOR

	D951	UDZS5.6B

COIL

	L951	BTH1081

SWITCHES

	S951	BSG1021
	S952,S953	BSH1008

CAPACITORS

	C4217,C4218	CCSQCH101J50
	C4201-C4216,C4219	CKSQYB102K50
	C951	CKSQYF104Z50

RESISTORS

	All Resistors	RS1/10S□□□J

OTHERS

	CN951	24P L TYPE PLUG	BKM1073
	CN952	9P D-SUB SOCKET	BKP1057
	CN953	MODULER CONNECTOR (8P)	BKP1112

J STB POWER ASSY

SEMICONDUCTORS

	IC110	M5233FP
	IC108	PQ3RF23
	Q112,Q113	2SA1048
	Q115,Q116	2SA1162
	Q102,Q104	2SB764
	Q110,Q111	2SC2458
	Q114	2SD1835
	Q106	2SD863
	Q107	DTA143EK
	Q101,Q117	DTC124ES
	Q103,Q105	DTC143EK
	D101,D102,D104-D106	HSS104-02
	D110	RD3.3ESB2
	D103	S5688G

COIL

	L101	BTH1071

RELAY

	RY101	BSR1019

CAPACITORS

	C106,C107 (0.01µF/AC250V)	ACG1005
	C109-C111	CEAS100M50
	C104	CEHAQ100M50
	C125	CEHAQ101M10
	C103	CEHAQ101M25
	C132	CEHAQ102M16
	C131	CEHAQ222M16
	C121	CEHAQ222M35
	C101,C102,C105,C108	CEHAQ470M25
	C803,C807	CKSQYB102K50
	C806	CKSQYB103K50
	C114-C116,C118-C120	CKSQYF103Z50
	C126-C130	CKSQYF103Z50

RESISTORS

	R103	RD1/2PM101J
	R105	RD1/2PM102J
	R101	RD1/2PM561J
	R140	RD1/4PU102J
	R102,R104,R126	RD1/4PU103J
	R121	RD1/4PU222J
	R131	RS1LMF100J
	R124	RS1LMF3R3J
	Other Resistors	RS1/10S□□□J

OTHERS

⚠	FU101-FU103	PROTECTOR (1A)	AEK7009
	CN105	20P PLUG	BKM1067
	CN101	2P PLUG	KM200SA2

K 10KEY ASSY

(1) CONTRAST TABLE

BWZ1871 and BWZ1859 are constructed the same except for the following :

Mark	Symbol and Description	Part No.		Remarks
		BWZ1871	BWZ1859	
	KN802 Ground Plate C	BNK1085	Not used	

(2) PARTS LIST FOR BWZ1871

SEMICONDUCTORS

	D823,D824	BEL1015
	D801-D812	HSS104-02
	D813-D822	SLP3118C51H

SWITCHES

	S801-S812	VSG1010

CAPACITORS

	C801	CEJA100M50
	C802	CKSQYB103K50

RESISTORS

	All Resistors	RD1/4PU□□□J

OTHERS

	KN802	GROUND PLATE C	BNK1085
	801	12P PIN HEADER	BKC1004

L POWER I/O ASSY

SEMICONDUCTORS

	Q1	2SD1835
	D1,D2	HSS104-02
⚠	VA2	ERZV14V911C1

COIL

⚠	L1	ATF1121

Mark	No.	Description	Part No.
RELAY			
⚠	RY1		BSR1016
CAPACITORS			
⚠	C1		BCE1005
⚠	C6,C7		BCG1017
RESISTORS			
	All Resistors		RD1/4PU□□□J
OTHERS			
⚠	H1-H4	FUSE CLIP	AKR1003
⚠	CN5	5P PLUG	BKM1022
⚠	CN4	4P PLUG	BKM1026
	CN3	3P PLUG	KM200SA3

M HDD1 ASSY

SEMICONDUCTORS			
	IC961,IC962		ICP-N50
	Q963		2SC2712
	Q962		DTA143EK
	Q961		DTC124EK
	D961		BEL1012
CAPACITORS			
	C4001,C963,C964		CKSQYB102K50
	C4002,C961,C962		CKSQYB103K50
RESISTORS			
	All Resistors		RS1/10S□□□J
OTHERS			
	CN962	40P PIN HEADER	BKC1010
	CN961	4P L TYPE PLUG	KM250MA4L
	CN963	60P RECEPTACLE	BKP1114

N HDD2 ASSY

CAPACITORS			
	C4101-C4119		CCSQCH101J50
	C4120,C4121,C4123,C973,C974		CKSQYB102K50
	C4122,C971,C972		CKSQYB103K50
OTHERS			
	CN972	40P PIN HEADER	BKC1010
	CN971	60P PIN HEADER (L)	BKM1065
	CN973	4P L TYPE PLUG	KM250MA4L

Mark	No.	Description	Part No.

O MOTHER ASSY

CAPACITORS			
	C4501,C4503,C4505,C4507		CKSQYB102K50
	C4532,C4533,C862,C863,C865		CKSQYB102K50
	C868,C869,C871,C873		CKSQYB102K50
	C876-C881,C883-C885		CKSQYB102K50
	C4502,C4504,C4506,C4527-C4531		CKSQYB103K50
	C861,C864,C866,C867,C870		CKSQYB103K50
	C872,C874,C875,C882,C886		CKSQYB103K50
RESISTORS			
	R4501,R4502,R4504,R891-R894		RA4C220J
	Other Resistors		RS1/10S□□□J
OTHERS			
	CN981	80P PIN HEADER	BKM1066
	CN982,CN983	80P RECEPTACLE	BKP1115

P BOOT ROM ASSY

SEMICONDUCTORS			
	IC851		PDN028B9
	IC852		PDN029B9
CAPACITORS			
	C853		CEAT470M25
	C851,C852		CKSQYB103K50
OTHERS			
	CN853	50P SOCKET	BKP1116
	CN851,CN852	44P IC SOCKET	BKH1006

6. ADJUSTMENT

6.1 DETAILS OF SWITCHES

SW1		L/TA	MLW/HK
1	MAINTENANCE CONSOLE BAUD RATE L	1	1
2	MAINTENANCE CONSOLE BAUD RATE H	1	1
3	ROM SELECT	0	0
4	PC MODE A	1	1
5	PC MODE B	1	1
6	LOGO OF SALES COMPANY	1	1
7	DESTINATION SETTING	1	1
8	DATA COPY TERMINAL	1	1

SW2		L/TA	MLW/HK
1	1 : MASTER 0 : SLAVE	1	1
2	Not used	1	1
3	Not used	1	1
4	REBOOT MODE	1	1
5	LANGUAGE SETTING	1	0
6	LANGUAGE SETTING	0	1
7	LANGUAGE SETTING	1	1
8	LANGUAGE SETTING	0	0

6.1.1 Maintenance Console Baud Rate

SW1-1	SW1-2	Baud Rate
1	1	9,600bps
0	1	19,200bps
1	0	38,400bps
0	0	115,200bps

6.1.2 Boot ROM Select

The initial settings are "0" for all models.

SW1-3	/MLW/HK model with a serial No. 1 to 100	/MLW/HK model with a seril No. over 101 or any /L/TA model
1	IC1024 (FLASH ROM)	IC1024 (FLASH ROM)
0	IC851 (OTP) and IC852	IC1024 (FLASH ROM)

6.1.3 PC Mode Setting

SW1-4	SW1-5	Baud Rate
1	1	Normal
0	1	when using PC
1	0	Reserved
0	0	Reserved

6.1.4 Logo of Sales Company

1 = Do not display the logo of the sales company
0 = Displays the logo of the sales company

6.1.5 Destination Setting

/MLW/HK:
1 = Hong Kong
0 = Singapore
/L/TA:
Always "1"

6.1.6 Data Copy Terminal (Ethernet) Switch

1 = Rear panel (MASTER/SLAVE TERMINAL)
0 = Front maintenance panel (DATA COPY TERMINAL)

6.1.7 Master/Slave Select

1 = MASTER
0 = SLAVE

6.1.8 Reboot Mode

Process setting for fatal errors:
1 = Reboot when a fatal error occurs
0 = Stop the CPU when a fatal error occurs

6.1.9 Language Setting

SW2-5	SW2-6	SW2-7	SW2-8	LANGUAGE
1	1	1	0	Japanese
0	1	1	0	English
1	0	1	0	Chinese
0	0	1	0	Reserved
1	1	0	0	Reserved
0	1	0	0	Reserved
1	0	0	0	Reserved
0	0	0	0	Reserved

Note: Always set SW2-8 to "0."

6.2 COLOR ADJUSTMENTS OF THE IC1315 (MAIN ASSY) (RGB ENCODER)

Start up the controller in Factory mode.
To set the controller to Factory mode, press the STANDBY/ON (Power) key while holding down the MENU key in standby status. During the mode shift, the indication shown in Fig. 1 appears on the 7-segment display of the controller.

Preparation: Supply an EIA color bar signal to BGV IN (VIDEO).

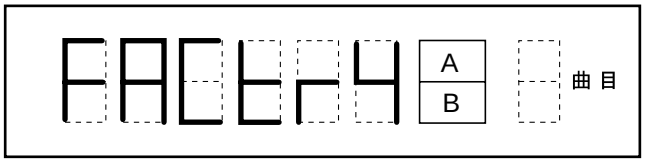


Fig.1 Display During the Shift to Factory Mode

Notes
- All the screen displays are in Japanese.
- To avoid trouble, do NOT execute any tests other than those mentioned in this manual.

The layout of the menu display in Factory mode is shown in Fig. 2.

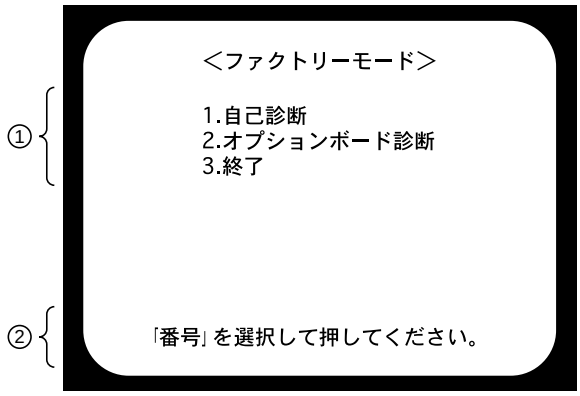


Fig.2 Top Display of Factory Mode

Table 1 Descriptions of the Display

Display (Japanese)	English Meaning	Function
<ファクトリーモード>	FACTORY MODE	TITLE
1. 自己診断	1. Self-Diagnosis	Select Self-Diagnosis
2. オプションボード診断	2. OPTION_BOARD Diagnosis	Don't Select
3. 終了	3. END	Terminates the mode and shifts to Karaoke mode
「番号」を選択して押して下さい	SELECT and PUSH Numerical KEY	

When the display shown in Fig. 2 appears, press the 1 key to shift to Self-Diagnosis mode.
When the display changes to that in Fig. 3, press the 2 key for the display tests.

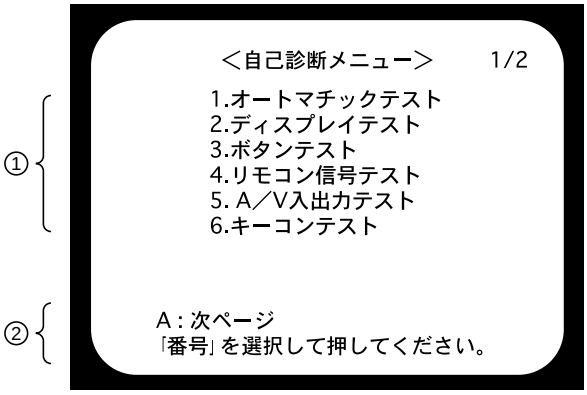


Fig.3 Self-Diagnosis Menu (1/2) Display

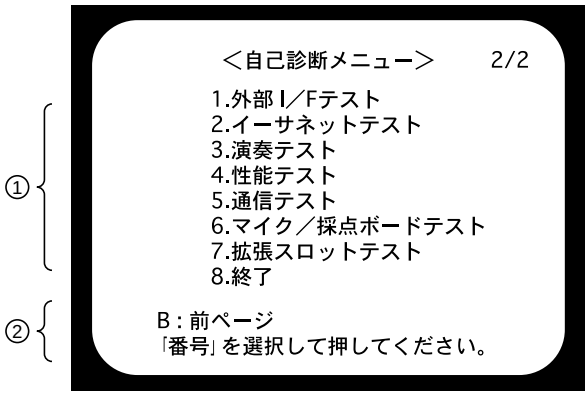


Fig.4 Self-Diagnosis Menu (2/2) Display

Table 2 Descriptions of the Display

Display (Japanese)	English Meaning	Function
<自己診断メニュー>	SELF CHECK MENU	TITLE
1. オートマチックテスト	1. AUTOMATIC_TEST	Don't Select
2. ディスプレイテスト	2. DISPLAY_TEST	Please Select !!
3. ボタンテスト 〜 6. キーコンテスト	3. BUTTON_TEST 〜 6. KEY CON._TEST	Don't Select
1. 外部I/Fテスト 〜 7. 拡張スロットテスト	1. EXTERNAL I/F_TEST 〜 7. OPTION SLOT_TEST	
A：次ページ	A. NEXT PAGE	
B：前ページ	B. PREVIOUS PAGE	
8. 終了	8. END	Return to the Top Page

When the display-test display (Fig. 5) appears, press the 3 key for the on-screen tests.

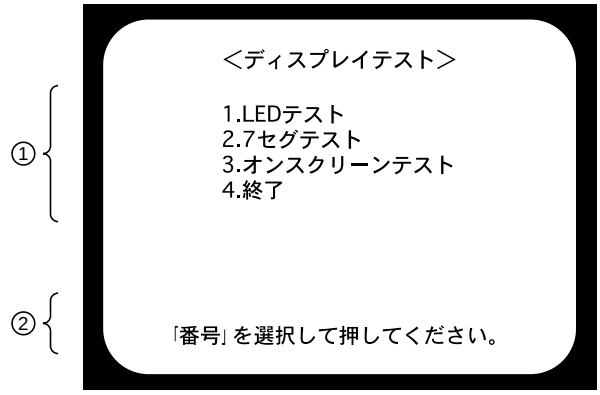


Fig.5 Display-Test Display (Menu)

Table 3 Descriptions of the Display-Test Display

Display (Japanese)	English Meaning	Function
<ディスプレイテスト>	DISPLAY TEST	TITLE
1. LEDテスト	1. LED_TEST	Don't Select
2. 7セグテスト	2. 7 SEG._TEST	Don't Select
3. オンスクリーンテスト	3. ON SCREEN_TEST	Please Select !!
A : 終了	A : END	
B : 前ページ	B : PREVIOUS PAGE	
8. 終了	8. END	Return to Self-Diagnosis Menu

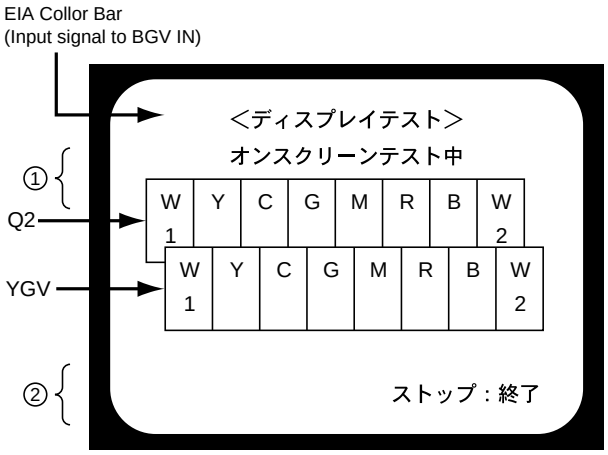


Fig.6 On-Screen Test Display (with an External Video Input)

Turn VR1301 so that the hue of the magenta becomes the same for the input EIA color bar signal and the OSD color bar being displayed in the center of the screen.
Note that the hue adjustment with two color bars at the center of the display cannot be made.

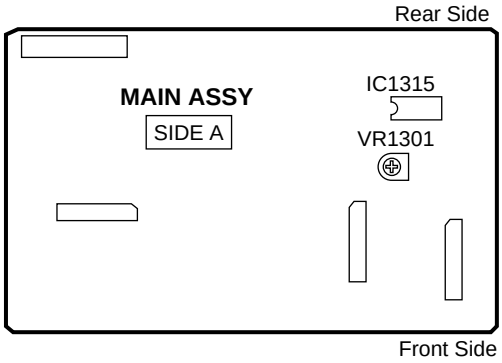


Fig.7 Location of the VR1301

You can terminate the on-screen tests by pressing the STOP key.

Summary of the key operations

To set the controller to Factory mode, press the STANDBY/ON (Power) key while holding down the MENU key in standby status.

Then press:

1 : for the Self-diagnosis menu (1/2)
2 : for the display tests
3 : for the on-screen tests

After VR adjustments, press:

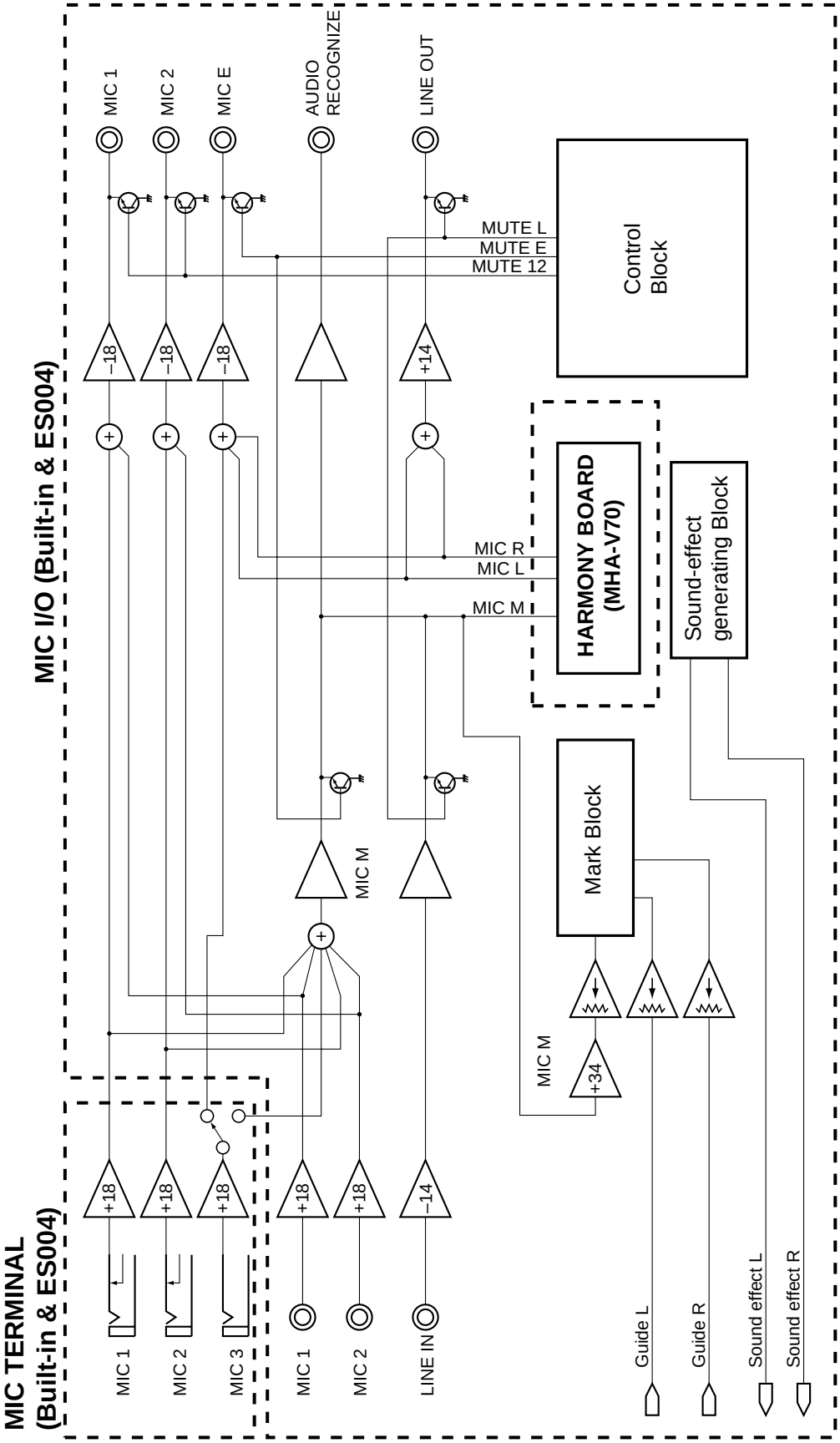
STOP : for the display tests
4 : for the Self-diagnosis menu (1/2)
A : for the Self-diagnosis menu (2/2)
8 : for the top display of Factory mode
3 : for Karaoke mode

Power key (hold pressed) for standby state

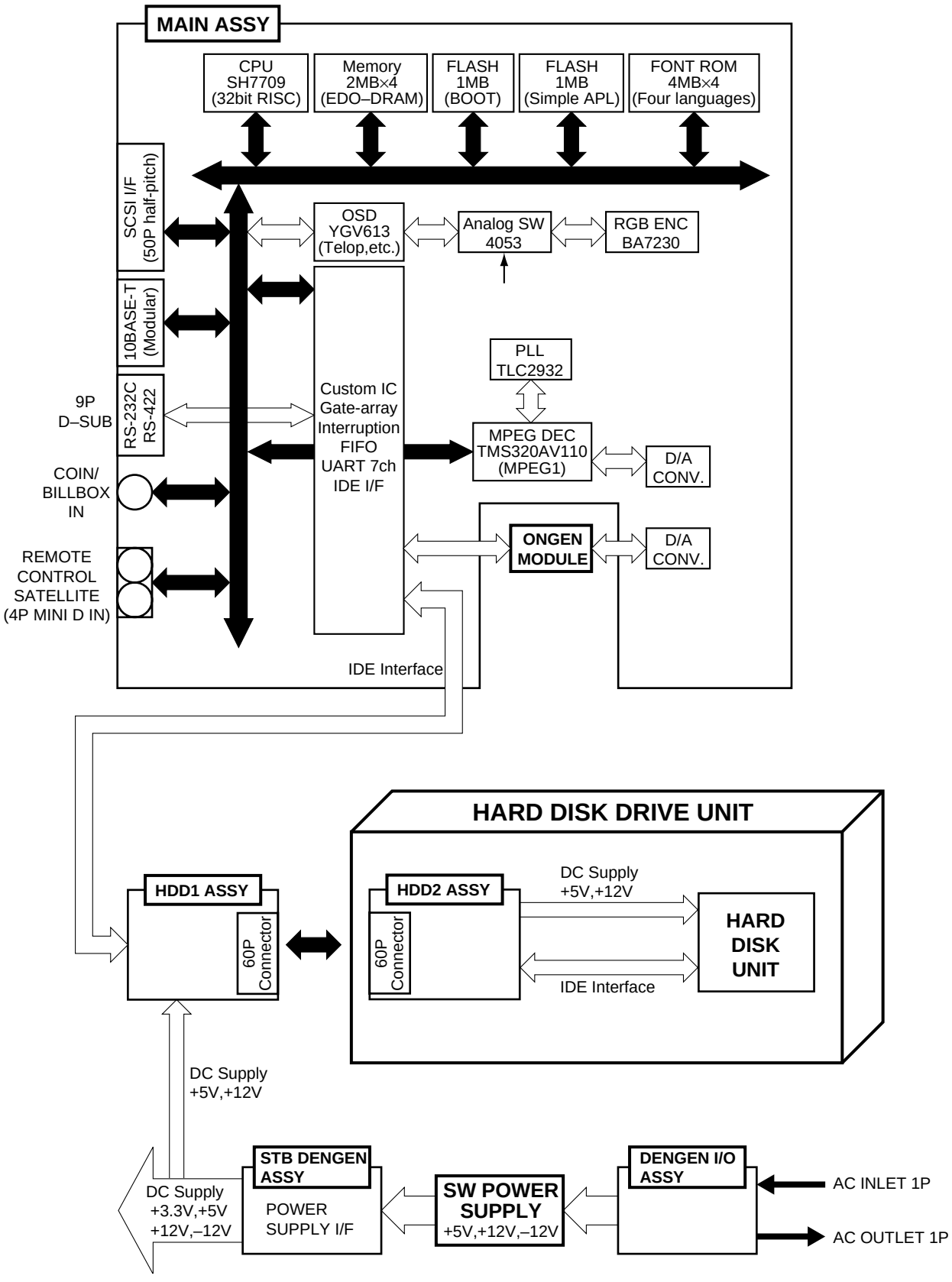
7. GENERAL INFORMATION

7.1 BLOCK DIAGRAM

7.1.1 MAIN SECTION



7.1.2 HDD SECTION

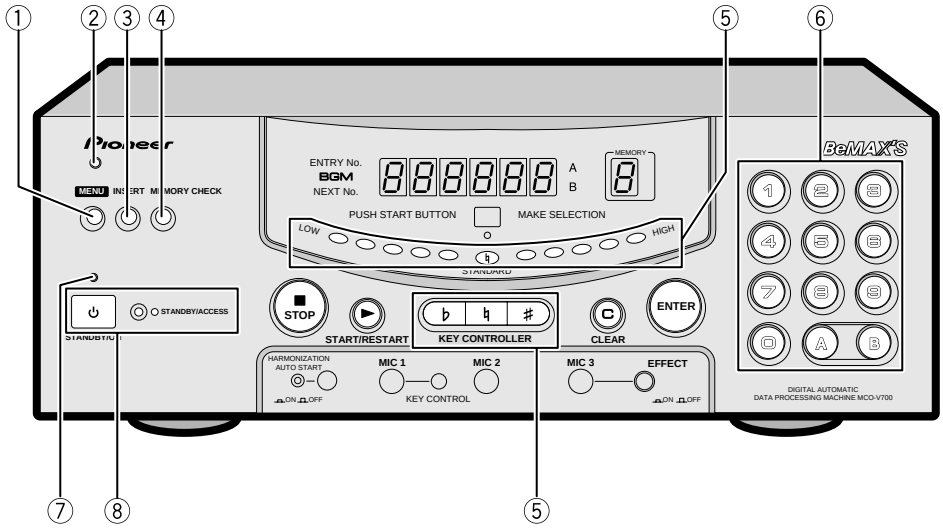


8. PANEL FACILITIES AND SPECIFICATIONS

8.1 PANEL FACILITIES

★ Information displayed on the screen may vary as the product is upgraded to newer versions.

Front Panel



① MENU button

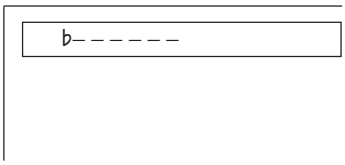
Selects the menu screen to display the new song information and various charts.

② Key Hole

Opens the front panel when the included key is inserted and turned to the left.

③ INSERT button

Inserts a song in front of a song that is already entered. Although there is a maximum of 8 songs that can be entered, using the Insert function makes it possible for 9 songs to be entered. When the inserted song is set, that song is played after the song that is presently being played.
The following will display on the monitor screen.



Screen that appears when operating the INSERT button function.

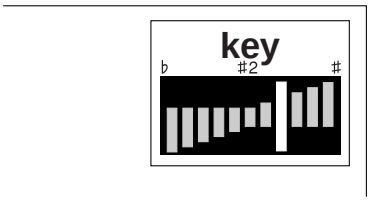
④ MEMORY CHECK button

Confirms the songs that have been entered. Each time this button is pushed, the entered song number is displayed in the SONG NUMBER indicator and the position held by that song in the entered order, is displayed in the MEMORY indicator.

⑤ KEY CONTROL change buttons and indicators

Increase or decrease the key (pitch) of the song with this button.
Each time a button is pushed, the pitch and indicator position change. After each song has finished, the unit returns to the standard key. The switch on the Maintenance Panel can be set so that the unit does not return to the standard key.

♭ (low) : Each time this button is pushed the key becomes a half step (semitone) lower.
♮ (standard): Returns the unit to play the song at the standard pitch.
♯ (high) : Each time this button is pushed the key becomes a half step (semitone) higher.
The following will display on the monitor screen.



Screen that appears when operating the KEY CONTROLLER button function.

⑥ Entry buttons

Enters song numbers with 0~9, A, and B buttons.

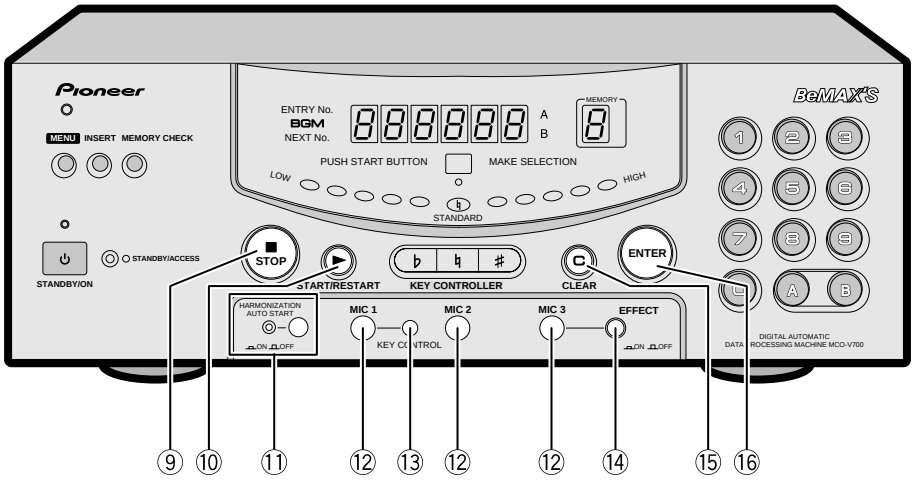
- When performing steps, there is about 10 seconds allotted to enter a song number. When more than 10 seconds is used the entered song number is cleared from memory.
- In the Set Operation Mode, the four buttons 2, 4, 6, and 8 are used to move the cursor.

⑦ Reset switch

Turns the power on and off to reset the unit when there is a slight malfunction. The Reset switch can be pushed with an object such as a ballpoint pen.

⑧ Power (STANDBY/ON) button and STANDBY/ ACCESS indicator

Turns the power on and off. (Push for about 2 second.)
Push the Power (STANDBY/ON) button to turn off the power, the "red" indicator turns on, and the unit enters stand-by (Data Transfer Stand-by Mode). The "green" indicator light blinks when the hard disk is being accessed.



⑨ STOP button (■)

Stops a song during playback.

- After a song has begun, when STOP (■) is pushed within the Replay Limit, you can make a song selection once more. *1 When a song is reserved, push START/RESTART (►) to start the next song.*2
- When a song has not been entered the MAKE SELECTION indicator light will blink and a song can be reselected.
- Song selection can be corrected up to 3 consecutive times.*3

⑩ START / RESTART button (►)

Starts song playback. (Only operates when the Start Mode is set to "Manual")

- This button can be operated when the PUSH START BUTTON indicator light blinks. During Karaoke playback, this button operates as the START/RESTART button (►).
- Push this button within the Replay Limit to restart the song. This provides another chance to sing the song again and correct your mistakes.*1
  Song selection can be corrected up to 3 consecutive times.*3
- In Reselect Song mode, when there is a song entered, push START / RESTART (►) to start the next song.*2

*1 A song that is stopped within the Replay Limit is not counted.
*2 Pushing START / RESTART (►) when a song has not been entered will have no effect.
*3 On the fourth time, the stop and restart functions will not operate.

⑪ HARMONIZATION AUTO START switch and indicator

When turned ON, harmonization automatically begins with harmonization compatible songs. When ON, the indicator light is "red".

⑫ MIC 1, 2, 3 Input

Connect a wired mic to the unit at this input. (sold separately)

⑬ KEY CONTROL Input

Connect a wired mic with key control functions at these inputs.

⑭ MIC 3 EFFECT switch

When turned ON , the music input at MIC 3 input can be harmonized and voice effects added.

⑮ CLEAR button (C)

Push to clear a song number while making a song selection. Start over the song selection steps, and choose a new song.

⑯ ENTER button

Push ENTER after selecting a song number. (The selected song is entered.)

- In the Set Operation Mode, use the Entry buttons to enter selections determined by the cursor.

Opening and Closing the Front Panel

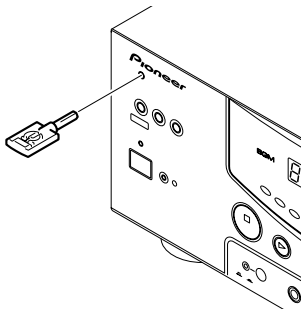
The front panel can be opened for various settings or for servicing. When opening and closing the front panel, take the following precautions.

Warning

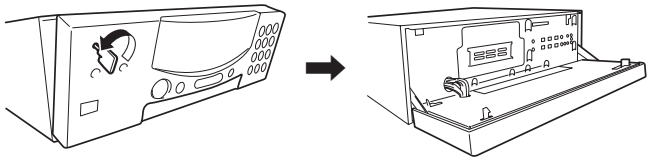
- Open the panel after confirming that there are not any objects in front of or on top of the front panel. Failure to check for the presence of objects may result in damage to this product.
- Insert only the key provided with this unit into the key hole. Other objects may cause a malfunction.
- Do not rest your hands or objects on the front panel after it has been opened.
- When closing the front panel, take care not to pinch your fingers or other objects in between the front panel and the main unit.
- Disconnect all wired mics.
- When the Stereo mixing amplifier (SA-V350II or SA-V300II) is on top of the main unit, sometimes the mixer legs are positioned so the front panel cannot be opened. First move the amp slightly towards the back (about 2 cm) and then open the front panel.

Opening the Front Panel

① Insert the key (included with the MCO-V700) into the key hole.

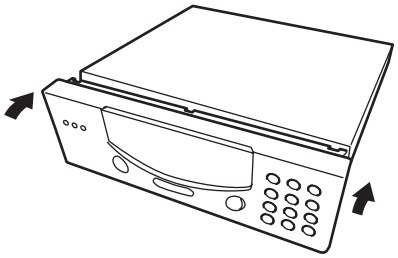


② Turn the key to the left (counter clockwise). Without turning the key back to the right, open the panel towards yourself.

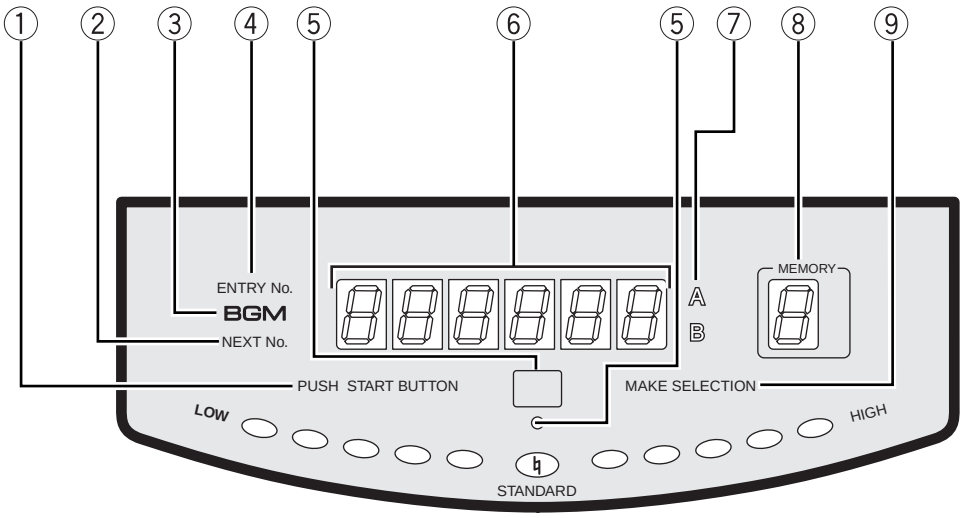


Closing the Front Panel

Push the upper corners of the front panel and close panel completely.



Indicator Area



① PUSH START BUTTON indicator

Indicates that the steps necessary to play songs has been completed. (blinking)

- In Replay Song Mode, when a song has been entered, the MAKE SELECTION indicator blinks.

② NEXT No. indicator

Displays the number of the next song. While selecting songs or performing other operations the indicator will not light.

③ BGM indicator

Turns on when background music (BGM) is playing.

④ ENTRY No. indicator

When this indicator is lit, the number displayed in the Song number indicator is the song that is now being selected.

⑤ Remote control unit sensor and indicator

Remote control signals are received here.
When signals are being received the indicator turns red.

⑥ Song number indicator

Displays a six digit song number.

- During performance, the song number is displayed for the duration of the Replay Limit. Once the Replay Limit is passed, the next song number is displayed. When a song is not entered, the present song number will continue to display even after passing the Replay Limit.
- When making a song selection, the song number chosen with ENTRY buttons is displayed.
- The song number displays about three seconds after making a song selection.
- In Memory Check Mode, the entered song numbers blink in the order that they will play.
- In Song Insert Mode, "000000" blinks.
- In Reselect Song Mode, the MAKE SELECTION indicator blinks and the next song number displays.

⑦ A,B indicator

When making a song selection from a laser disk (LD), disk side "A" or disk side "B" displays. (Planned to be used in the near future.)

⑧ MEMORY indicator

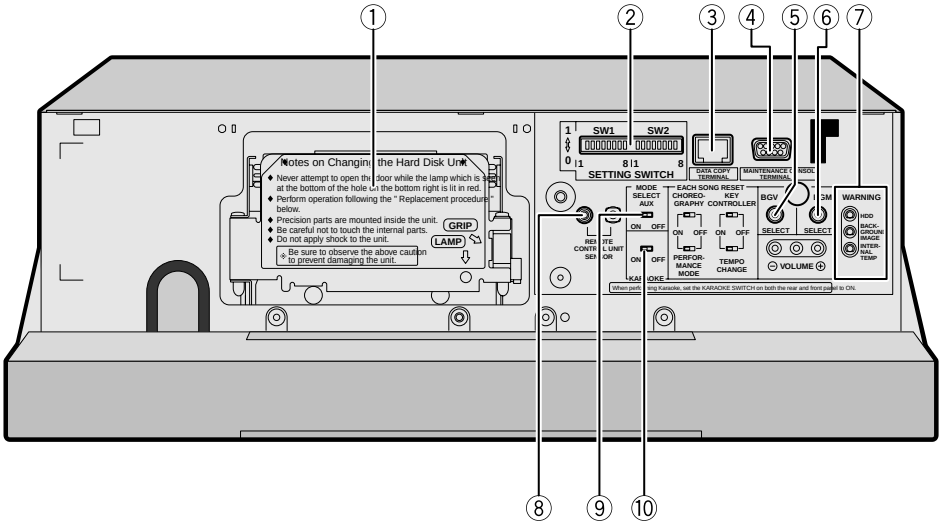
Displays the number of songs that have been entered.

⑨ MAKE SELECTION indicator

When there is not a song entered, the indicator blinks, and when a song is entered, the indicator turns on.

- In Reselect Song Mode, the PUSH START BUTTON indicator blinks.

Inside Front Panel (Maintenance Panel)



① Hard Disk Unit

When the hard disk unit is damaged it is possible to change the internal hard disk unit located here. (For more information on changing the hard disk unit, contact your dealer.)

② SETTING SWITCH

This switch is used when the unit is installed or serviced. Normally this switch is not used.

③ DATA COPY TERMINAL

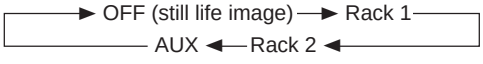
This terminal is used when the unit is installed or serviced. Normally this terminal is not used.

④ MAINTENANCE CONSOLE CONNECT (9pinD-Sub connector)

This connector is used when the unit is serviced. Normally this switch is not used.

⑤ BGV SELECT button

Switches BGV settings. (Background images for when a song is not selected.)
Each time this button is pushed, the settings change as follows. (For more information contact your dealer.)



⑥ BGM SELECT button

Switches BGM settings.
Each time this button is pushed, the settings change as follows.

⑦ WARNING indications

Display related problems to the Controller.

- HDD indicator
  In case a problem is discovered with the HDD, the indicator lights in "red."
- BACKGROUND IMAGE indicator
  In case a problem is discovered with the background image player, the indicator lights in "red."
- INTERNAL TEMP indicator
  In case a problem is discovered with temperature inside the unit, the indicator lights in "orange."

⑧ Remote control sensor and indicator

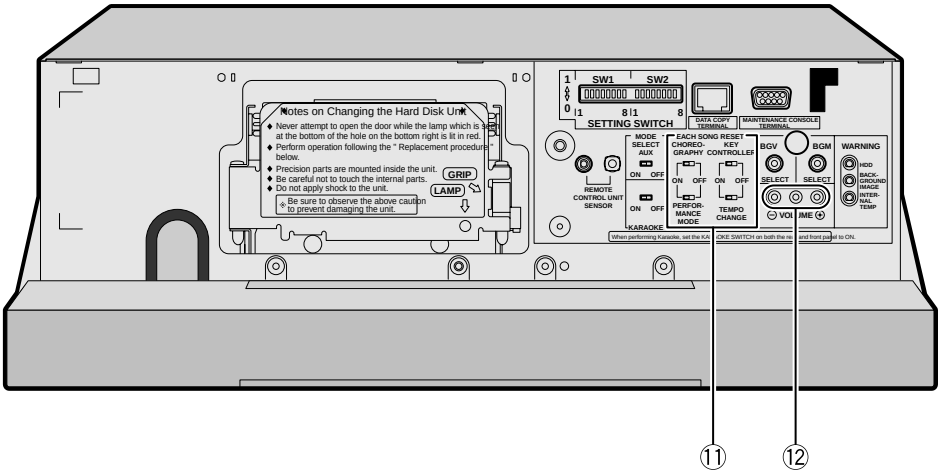
Remote control signals are received here.
When remote control signals are being received, the indicator light turns "red."

⑨ MODE SELECT AUX ON / OFF switch

Set to ON when the unit is not being used for Karaoke. This setting can be used when watching a video for example. When set to ON the function displays will not operate, however the unit functions normally and Karaoke is possible.

⑩ MODE SELECT KARAOKE ON / OFF switch

This switch is used when setting up the Controller. Normally this switch is set to ON.



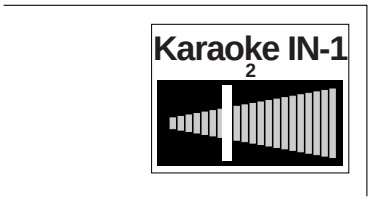
⑪ EACH SONG RESET switch

(Selects whether the song will be reset or not reset for KEY CONTROLLER and TEMPO CHANGE.)

This switch sets whether the unit will reset after each song (return to the initial preset values) or not reset.

⑫ VOLUME ADJUSTMENT buttons

- VOLUME button
  When adjusting the volume, first, use this button to select the source you want to adjust (KARAOKE, BGM, LD IN, or AUX/ LD2), and adjust the volume with the VOLUME adjustment buttons. The volume can be adjusted when the selected source is producing music. Also you can use the Karaoke song to check the volume level of the BGM.
- – (MINUS) / +(PLUS) buttons
  Push to adjust the volume of the source selected by the VOLUME button.



Selected volume adjustment display

8.2 SPECIFICATIONS

■ General

Power supply (L/TA) ..... 110 V AC, 60 Hz
Power supply (MLW/HK) ..... 220 -230 V AC, 50/60 Hz
Rated current ..... 1.1A Max, including the AC outlet
Guaranteed operational temperature ..... 5°C -35°C
Dimensions ..... 420 (W) x 401 (D) x 158 (H) mm
..... (not including the cords)
Weight ..... 8.9 kg

■ Video IN

Input (BGV IN, LD Auto Changer x 2) ..... RCA pin jack x 3
Input (sensitivity / impedance) ..... 1 Vp-p/75 Ω
Outputs (A,B) ..... (RCA pin jack)
Outputs (Level, impedance) ..... 1 Vp-p/75 Ω

■ AUDIO IN OUT (L, R)

Output ..... RCA pin jack x 1 (L, R)
Output (Level / impedance) ..... 200 mV/2.2 kΩ (below)
Input (BGV, LD, AUX/LD2) ..... RCA pin jack x 2 (R, L)
Input (Maximum input level / impedance) ... 2 Vrms/22 kΩ (above)

■ Guidance Melody Inputs

Outputs ..... RCA pin jack x 1
Output (Level / impedance) ..... 200 mV/2.2 kΩ (below)

■ Mic Inputs

Mic Input (front) ..... standard mic jack x 3
Mic Input (rear) ..... pin jack x 2
Mic Output ..... pin jack x 3
Mic Pre-amp Output ..... pin jack x 1

■ Other Connectors

DATA COPY TERMINAL ..... modular connector
MAINTENANCE CONSOLE CONNECT ..... 9-pin D-Sub
KEY CONTROL (Front) ..... stereo mini jack x 1
KEY CONT IN 1, 2 (Rear) ..... stereo mini jack x 2
ADDITIONAL TERMINAL ..... 8-pin DIN
TO REMOTE CONTROL SATELLITE connector (Input) 4-pin DIN x 2
MASTER / SLAVE connectors ..... modular connector
EXT CONTROL TERMINAL ..... 9-pin D-Sub
DVD/CD-ROM CONTROL TERMINAL (SCSI) ..... SCSI (50 pin)

■ LINE IN OUT

LINE IN ..... RCA pin jack x 1
LINE OUT ..... RCA pin jack x 1

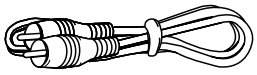
■ Additions

Operating Instructions 1
Operation sheet 1
Connections Diagram 1
Audio cord 1
Video cord 1
Power cord 1
Mic cord 1
Remote Control Unit 1
Dry cell batteries (size 3 alkaline batteries /LR6) 2
Door key 1
Mic Panel Cover 1

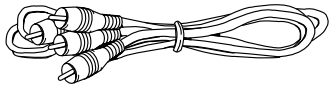
- In order to improve products, the specifications above and the external design are subject to change without notice.

■ Accessories

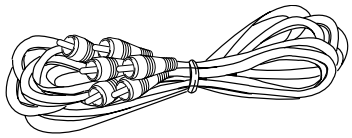
- Video cord: 1
(RCA pin plug ←→ RCA pin plug)



- Audio cord: 1
(RCA pin plug x 2 ←→ RCA pin plug x 2)

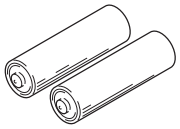


- Mic cord: 1
(RCA pin plug x 3 ←→ RCA pin plug x 3)

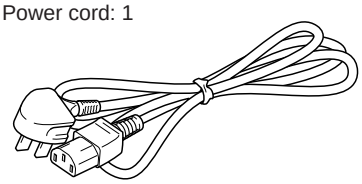


- Remote control unit

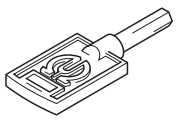
- Size 3 Alkaline dry cell batteries (LR6): 2



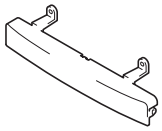
- Power cord: 1



- Door key: 1



- Mic panel cover



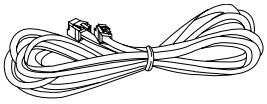
- Operating Instructions
- Operation Sheet
- Connections Diagram

● SPECIFICATIONS for MMD-V70 and MMD-V700

Compatible Analog line ..... public telephone line
Telephone line interface ..... two-line format
Dialing format ..... tone (DTMF)
pulse (10pps/20pps)
Transmission format ..... All doubled
Conversion format ..... QAM(33600 - 2400bps)
Data transmission speed ..... 2400 - 33600bps
Power supply ..... DC8+5V/DC–12V
Dimensions ..... 154 (W) x 30 (H) x 142 (D) mm
Weight ..... 0.13 kg

* For specific information on installation steps, refer to the owner's manual or the installation manual for the main unit (BeMAX's Controller MCO-V700).

■ Accessories



● Modular cable:1 ● Operating Instructions